

13 14 16 17 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 35 43 44 45 47

1 2 3 4 5 6 7 8 9 10 11 12

1-19 2-14 3-13 6-8 7-20 11-16 12-17 19-21 20-22 21-43 21-44 22-45 22-47 23-25 23-26  
23-27 24-28 24-29 24-30 31-32 31-33 32-35

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

1-19 2-14 3-13 7-20 11-16 12-17 19-21 20-22 21-43 21-44 22-45 22-47 23-25 23-26 23-27  
24-28 24-29 24-30 31-32 31-33 32-35

6-8

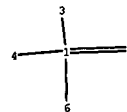
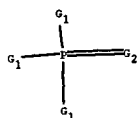
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

G3:Cy,Ak

G4:Cb,Cy,Hy,Ak,MeO,EtO,n-PrO,i-PrO,n-BuO,i-BuO,s-BuO,t-BuO,PhO

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom  
13:CLASS14:CLASS16:CLASS17:CLASS19:CLASS20:CLASS21:CLASS22:CLASS23:CLASS24:CLASS  
25:CLASS26:CLASS27:CLASS28:Atom 29:Atom 30:Atom 31:CLASS32:CLASS33:CLASS35:CLASS  
43:CLASS44:CLASS45:CLASS47:CLASS



chain nodes :

1 3 4 6 8

chain bonds :

1-3 1-4 1-6 1-8

exact/norm bonds :

1-3 1-4 1-6 1-8

G1:Cb,Cy,Hy,Ak

G2:O,S

Match level :

1:CLASS3:CLASS4:CLASS6:CLASS8:CLASS

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSPTAMLL1621

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\* \* \* \* \* Welcome to STN International \* \* \* \* \*

NEWS 1 Web Page for STN Seminar Schedule - N. America  
NEWS 2 MAR 15 WPIDS/WPIX enhanced with new FRAGHITSTR display format  
NEWS 3 MAR 16 CASREACT coverage extended  
NEWS 4 MAR 20 MARPAT now updated daily  
NEWS 5 MAR 22 LWPI reloaded  
NEWS 6 MAR 30 RDISCLOSURE reloaded with enhancements  
NEWS 7 APR 02 JICST-EPLUS removed from database clusters and STN  
NEWS 8 APR 30 GENBANK reloaded and enhanced with Genome Project ID field  
NEWS 9 APR 30 CHEMCATS enhanced with 1.2 million new records  
NEWS 10 APR 30 CA/CAPLUS enhanced with 1870-1889 U.S. patent records  
NEWS 11 APR 30 INPADOC replaced by INPADOCDB on STN  
NEWS 12 MAY 01 New CAS web site launched  
NEWS 13 MAY 08 CA/CAPLUS Indian patent publication number format defined  
NEWS 14 MAY 14 RDISCLOSURE on STN Easy enhanced with new search and display fields  
NEWS 15 MAY 21 BIOSIS reloaded and enhanced with archival data  
NEWS 16 MAY 21 TOXCENTER enhanced with BIOSIS reload  
NEWS 17 MAY 21 CA/CAPLUS enhanced with additional kind codes for German patents  
NEWS 18 MAY 22 CA/CAPLUS enhanced with IPC reclassification in Japanese patents  
NEWS 19 JUN 27 CA/CAPLUS enhanced with pre-1967 CAS Registry Numbers  
NEWS 20 JUN 29 STN Viewer now available  
NEWS 21 JUN 29 STN Express, Version 8.2, now available  
NEWS 22 JUL 02 LEMBASE coverage updated  
NEWS 23 JUL 02 LMEDLINE coverage updated  
NEWS 24 JUL 02 SCISEARCH enhanced with complete author names  
NEWS 25 JUL 02 CHEMCATS accession numbers revised  
NEWS 26 JUL 02 CA/CAPLUS enhanced with utility model patents from China  
NEWS 27 JUL 16 CAPLUS enhanced with French and German abstracts  
NEWS 28 JUL 18 CA/CAPLUS patent coverage enhanced  
NEWS 29 JUL 26 USPATFULL/USPAT2 enhanced with IPC reclassification  
NEWS 30 JUL 30 USGENE now available on STN

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,  
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS LOGIN Welcome Banner and News Items  
NEWS IPC8 For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 15:45:59 ON 02 AUG 2007

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 15:46:41 ON 02 AUG 2007

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 1 AUG 2007 HIGHEST RN 943895-11-2

DICTIONARY FILE UPDATES: 1 AUG 2007 HIGHEST RN 943895-11-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=>

Uploading C:\Program Files\Stnexp\Queries\2007 cases\10576219\formula 1.str

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

=> s ;1  
ENTER LOGIC EXPRESSION, QUERY NAME, OR (END):end  
SEARCH ENDED BY USER

1 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter  
"HELP COMMANDS" at an arrow prompt (=>).

=> s l1  
SAMPLE SEARCH INITIATED 15:47:24 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 116 TO ITERATE

100.0% PROCESSED 116 ITERATIONS 4 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 1674 TO 2966  
PROJECTED ANSWERS: 4 TO 200

L2 4 SEA SSS SAM L1

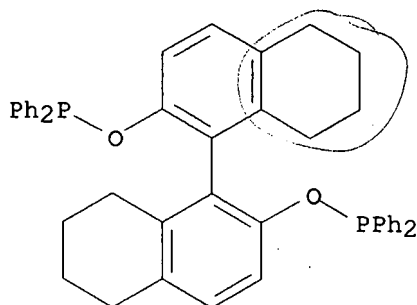
=> s l1 sss full  
FULL SEARCH INITIATED 15:47:34 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 2120 TO ITERATE

100.0% PROCESSED 2120 ITERATIONS 128 ANSWERS  
SEARCH TIME: 00.00.01

L3 128 SEA SSS FUL L1 \* \*

=> d l3 1-110 ide

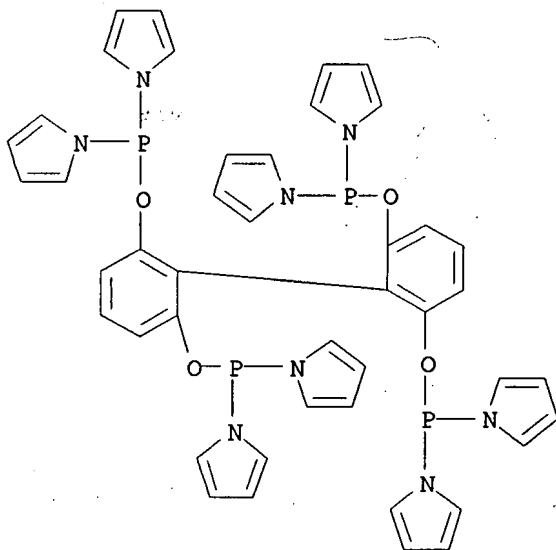
L3 ANSWER 1 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 930578-73-7 REGISTRY  
ED Entered STN: 17 Apr 2007  
CN Phosphinous acid, P,P-diphenyl-, P,P'-[(1R)-5,5',6,6',7,7',8,8'-  
octahydro[1,1'-binaphthalene]-2,2'-diyl] ester (CA INDEX NAME)  
MF C44 H40 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

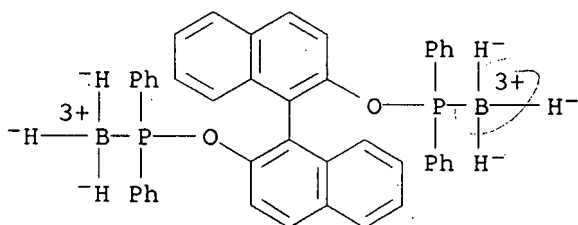
L3 ANSWER 2 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 920508-98-1 REGISTRY  
ED Entered STN: 12 Feb 2007  
CN 1H-Pyrrole, 1,1',1'',1''',1'''',1''''',1''''',1''''''-[[1,1'-biphenyl]-  
2,2',6,6'-tetrayltetrakis(oxyphosphinidyne)]octakis- (CA INDEX NAME)  
MF C44 H38 N8 O4 P4  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

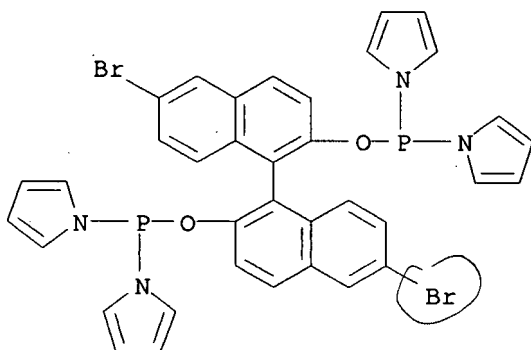
L3 ANSWER 3 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 918399-06-1 REGISTRY  
ED Entered STN: 24 Jan 2007  
CN Boron, [ $\mu$ -[P,P'-[(1S)-[1,1'-binaphthalene]-2,2'-diyl]  
bis(P,P-diphenylphosphinite- $\kappa$ P)]]hexahydrodi- (CA INDEX NAME)  
MF C44 H38 B2 O2 P2  
CI CCS  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

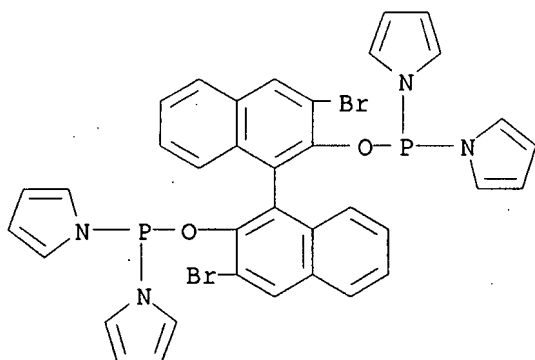
L3 ANSWER 4 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 916049-87-1 REGISTRY  
ED Entered STN: 20 Dec 2006  
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(6,6'-dibromo[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)  
MF C36 H26 Br2 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

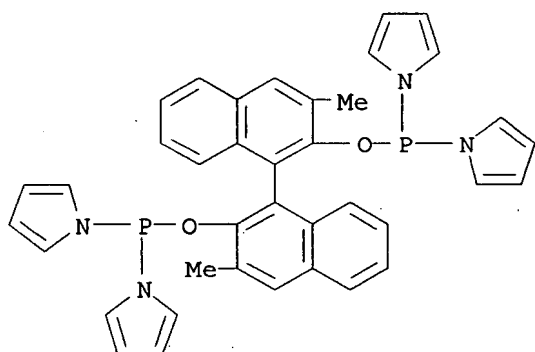
L3 ANSWER 5 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 916049-86-0 REGISTRY  
ED Entered STN: 20 Dec 2006  
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-dibromo[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)  
MF C36 H26 Br2 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 6 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 916049-84-8 REGISTRY  
ED Entered STN: 20 Dec 2006  
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-dimethyl[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)  
MF C38 H32 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS

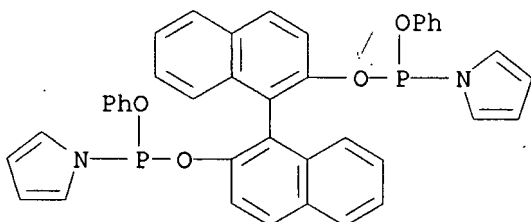


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 7 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 916049-83-7 REGISTRY  
ED Entered STN: 20 Dec 2006  
CN Phosphonous acid, P-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl P,P'-diphenyl ester (CA INDEX NAME)  
MF C40 H30 N2 O4 P2  
SR CA

LC STN Files: CA, CAPLUS

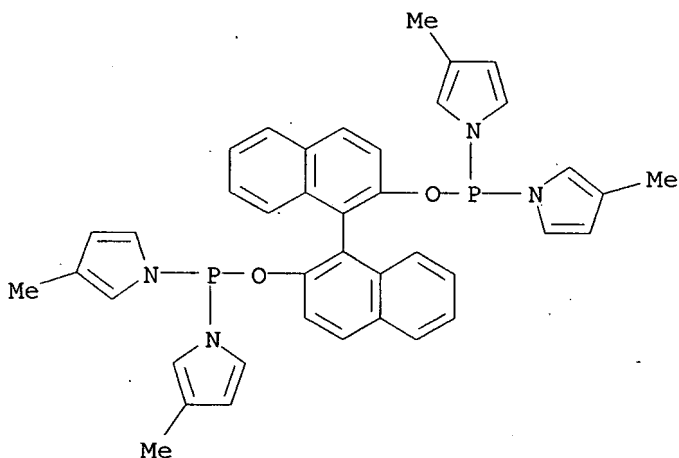


RN 916049-82-6

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 8 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 916049-82-6 REGISTRY  
ED Entered STN: 20 Dec 2006  
CN Phosphinous acid, P,P-bis(3-methyl-1H-pyrrol-1-yl)-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)  
MF C40 H36 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



RN 910134-31-5

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 9 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 910134-31-5 REGISTRY  
ED Entered STN: 11 Oct 2006  
CN Phosphinous acid, diphenyl-, (1S)-5,5',6,6',7,7',8,8'-octahydro[1,1'-

binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

OTHER NAMES:

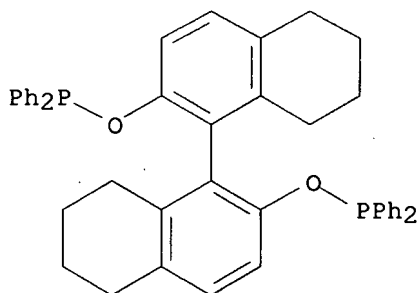
CN (S)-2,2'-Bis(diphenylphosphinoxy)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl

MF C44 H40 O2 P2

SR CA

LC STN Files: CA, CAPLUS, CASREACT

*PH 910134-31-5*



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 10 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

RN 909868-28-6 REGISTRY

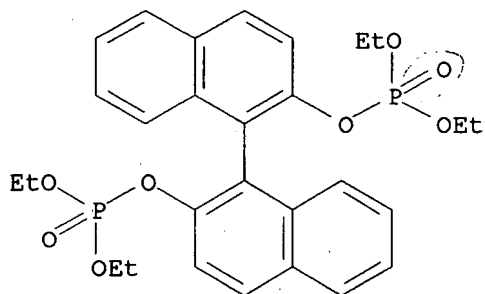
ED Entered STN: 09 Oct 2006

CN Phosphoric acid, (1R)-[1,1'-binaphthalene]-2,2'-diyl tetraethyl ester (9CI) (CA INDEX NAME)

MF C28 H32 O8 P2

SR CA

LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

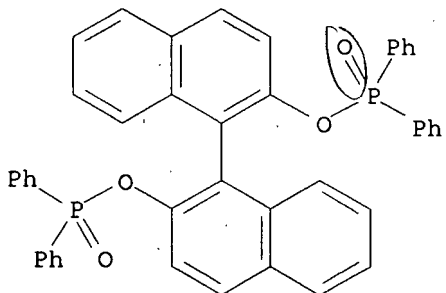
2 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 11 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

RN 874948-83-1 REGISTRY

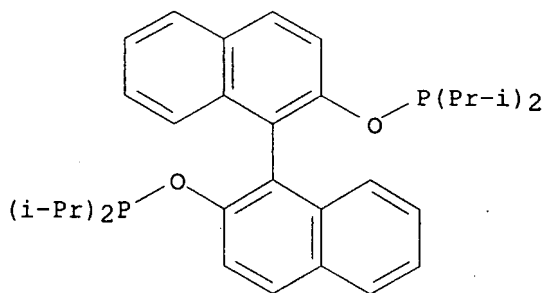
ED Entered STN: 23 Feb 2006  
CN Phosphinic acid, diphenyl-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)  
MF C44 H32 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 12 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 872322-97-9 REGISTRY  
ED Entered STN: 20 Jan 2006  
CN Phosphinous acid, bis(1-methylethyl)-, (1S)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C32 H40 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



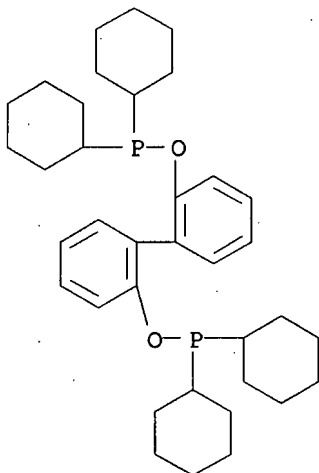
RN 872322-97-9

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 13 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 872217-45-3 REGISTRY  
ED Entered STN: 19 Jan 2006

CN Phosphinous acid, dicyclohexyl-, [1,1'-biphenyl]-2,2'-diyl ester (9CI)  
(CA INDEX NAME)  
MF C36 H52 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

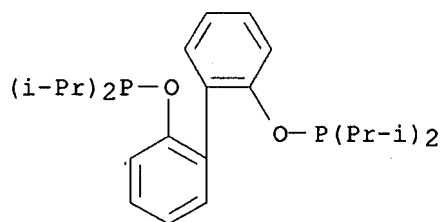


RN 872217-45-3

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 14 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 872217-44-2 REGISTRY  
ED Entered STN: 19 Jan 2006  
CN Phosphinous acid, bis(1-methylethyl)-, [1,1'-biphenyl]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)  
MF C24 H36 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



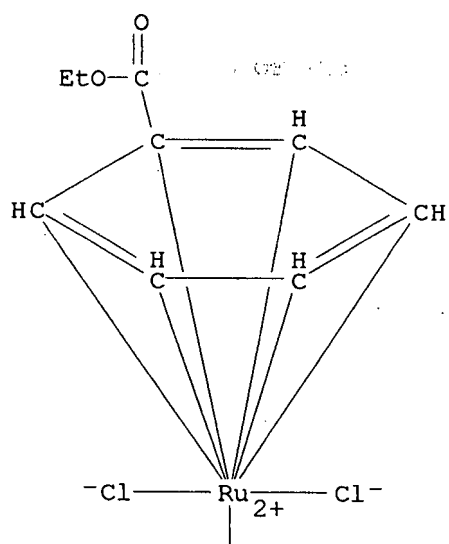
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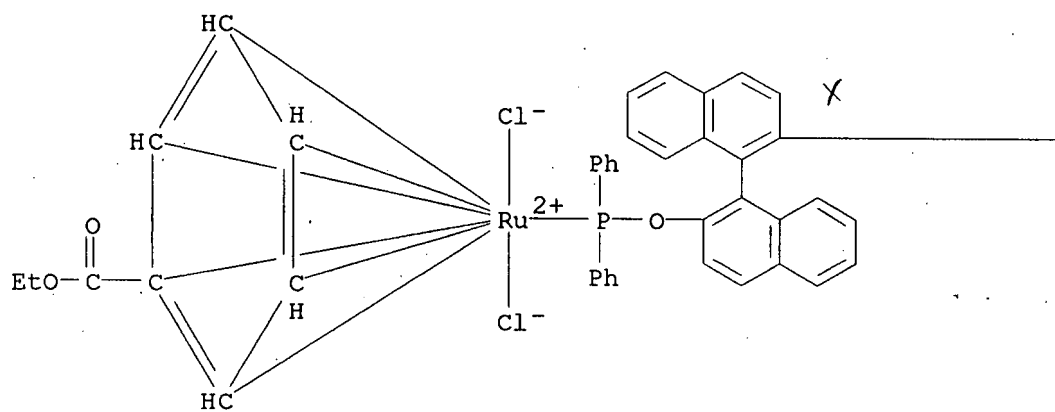
L3 ANSWER 15 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 868630-43-7 REGISTRY  
 ED Entered STN: 22 Nov 2005  
 CN Ruthenium, [ $\mu$ -[1R)-[1,1'-binaphthalene]-2,2'-diyl  
 bis(diphenylphosphinite- $\kappa$ P)]]tetrachlorobis[(1,2,3,4,5,6- $\eta$ )-  
 ethyl benzoate]di- (9CI) (CA INDEX NAME)  
 MF C62 H52 Cl4 O6 P2 Ru2  
 CI CCS  
 SR CA  
 LC STN Files: CA, CAPLUS

PAGE 1-B

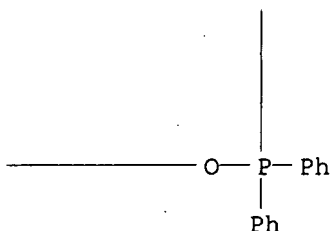


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PAGE 2-A



PAGE 2-B

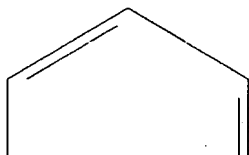


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

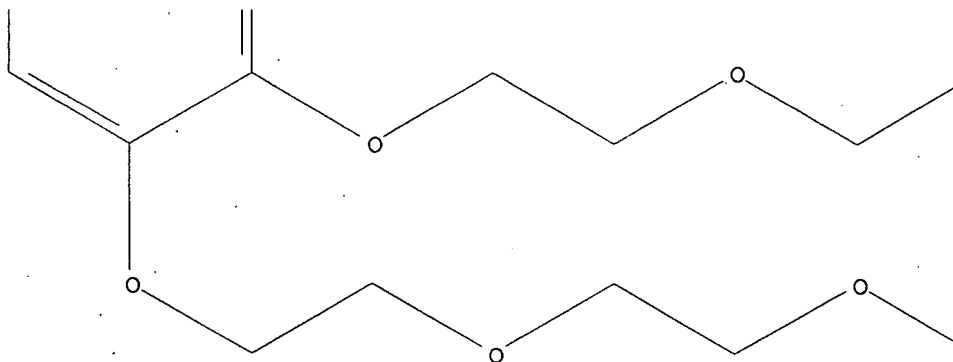
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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 16 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 868630-42-6 REGISTRY  
ED Entered STN: 22 Nov 2005  
CN Ruthenium, [ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl  
bis(diphenylphosphinite- $\kappa$ P)]]tetrachlorobis[(1,2,3,4,4a,22a- $\eta$ )-  
6,7,9,10,17,18,20,21-octahydrodibenzo[b,k][1,4,7,10,13,16]hexaoxacycloocta  
decin]di- (9CI) (CA INDEX NAME)  
MF C84 H80 Cl4 O14 P2 Ru2  
CI CCS  
SR CA  
LC STN Files: CA, CAPLUS

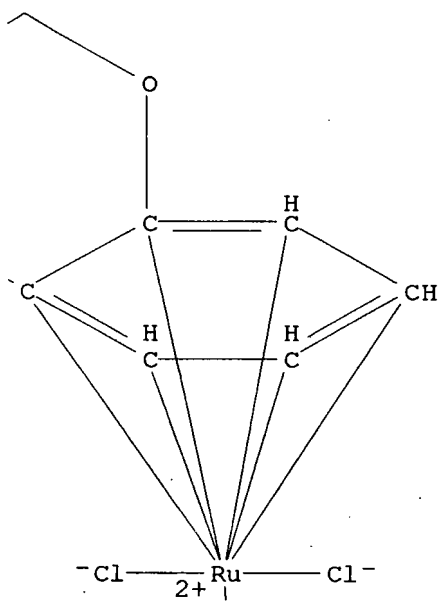
PAGE 1-A

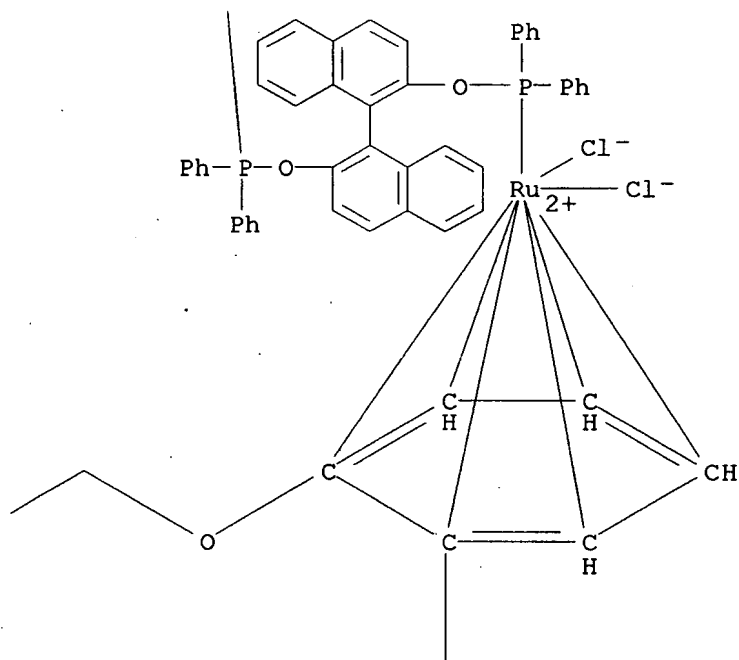
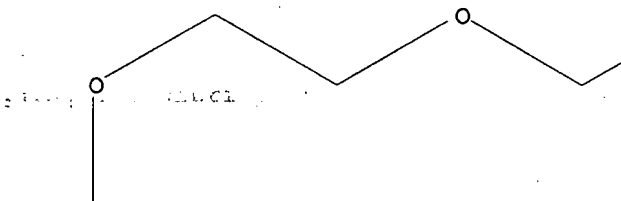


PAGE 2-A

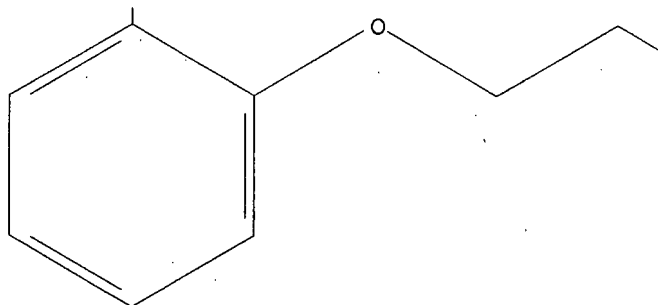


PAGE 2-B

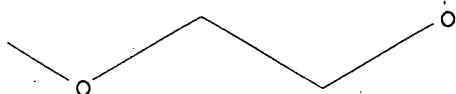




PAGE 4-A



PAGE 4-B



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

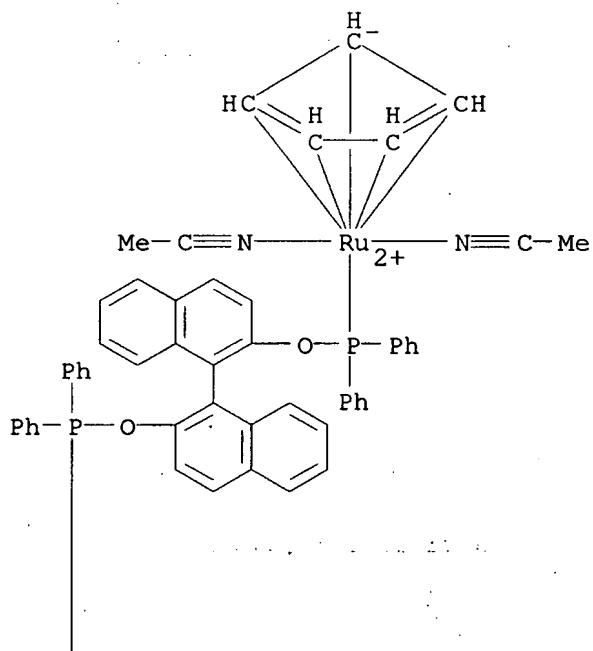
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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 17 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 868630-38-0 REGISTRY  
ED Entered STN: 22 Nov 2005  
CN Ruthenium(2+), tetrakis(acetonitrile)[ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl bis(diphenylphosphinite- $\kappa$ P)]]bis( $\eta$ 5-2,4-cyclopentadien-1-yl)di-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)  
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SR CA  
LC STN Files: CA, CAPLUS

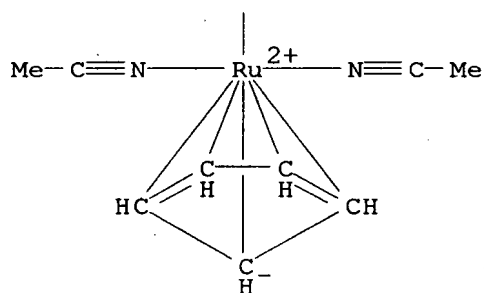
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CCI CCS

PAGE 1-A



PAGE 2-A

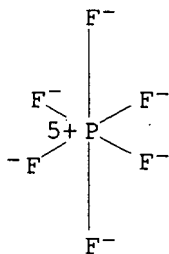


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

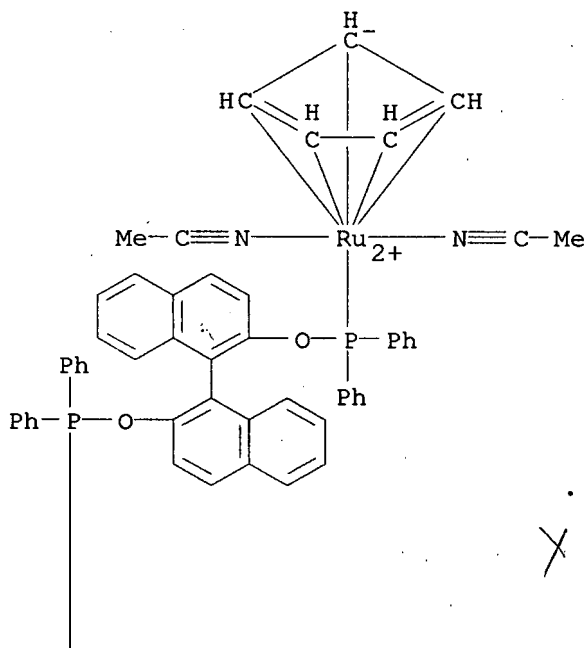


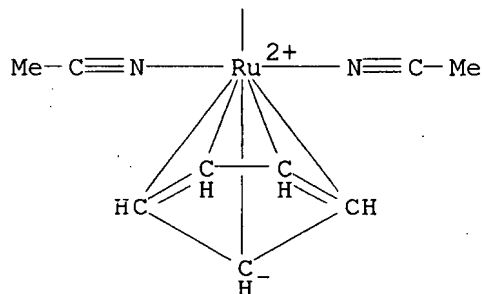
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 18 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 868630-37-9 REGISTRY  
ED Entered STN: 22 Nov 2005  
CN Ruthenium(2+), tetrakis(acetonitrile)[ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl bis(diphenylphosphinite- $\kappa$ P)]]bis( $\eta$ 5-2,4-cyclopentadien-1-yl)di- (9CI) (CA INDEX NAME)  
MF C62 H54 N4 O2 P2 Ru2  
CI CCS, COM  
SR CA

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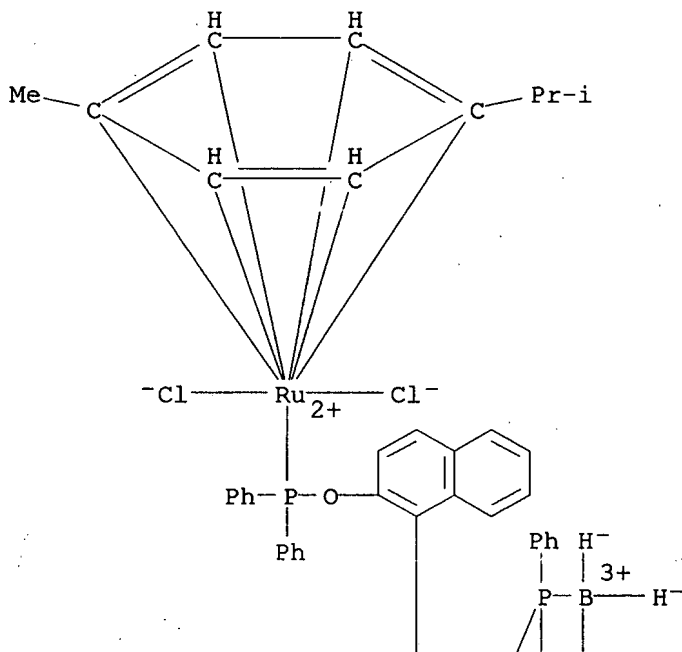




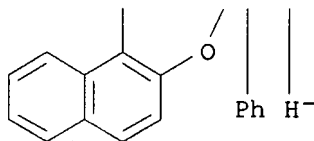
L3 ANSWER 19 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 868630-31-3 REGISTRY  
 ED Entered STN: 22 Nov 2005  
 CN Ruthenium, [ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl  
 bis(diphenylphosphinite- $\kappa$ P)]]dichloro[(1,2,3,4,5,6- $\eta$ )-1-methyl-4-  
 (1-methylethyl)benzene](trihydroboron)di-, compd. with trichloromethane  
 (1:1) (9CI) (CA INDEX NAME)  
 MF C54 H49 B Cl2 O2 P2 Ru . C H Cl3  
 SR CA  
 LC STN Files: CA, CAPLUS

CM 1

CRN 868630-30-2  
 CMF C54 H49 B Cl2 O2 P2 Ru  
 CCI CCS



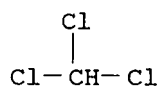
PAGE 2-A



CM 2

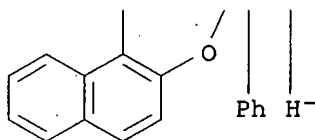
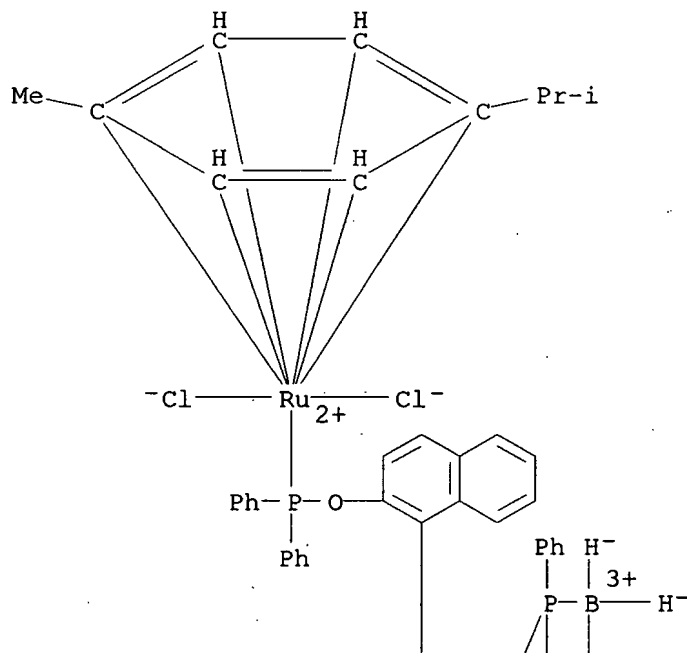
CRN 67-66-3

CMF C H Cl3



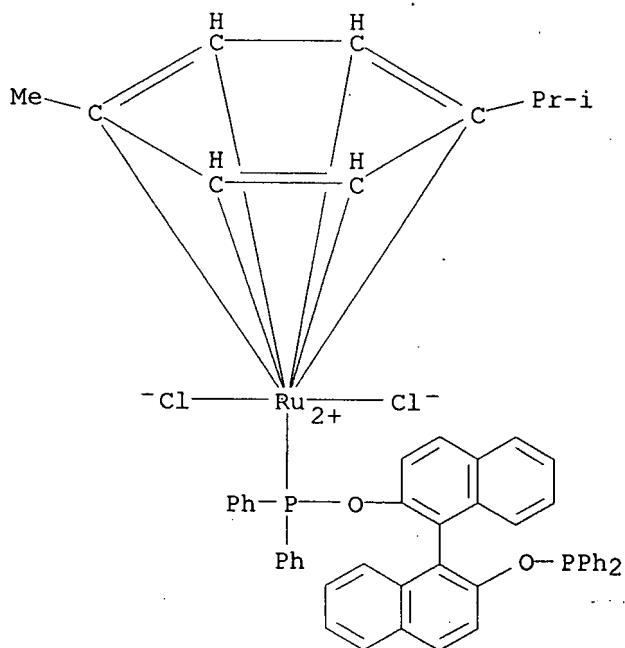
1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 20 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 868630-30-2 REGISTRY  
ED Entered STN: 22 Nov 2005  
CN Ruthenium, [ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl  
bis(diphenylphosphinite- $\kappa$ P)]]dichloro[(1,2,3,4,5,6- $\eta$ )-1-methyl-4-  
(1-methylethyl)benzene](trihydroboron)di- (9CI) (CA INDEX NAME)  
MF C54 H49 B Cl2 O2 P2 Ru  
CI CCS, COM  
SR CA  
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 21 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 868630-29-9 REGISTRY  
ED Entered STN: 22 Nov 2005  
CN Ruthenium, dichloro[(1R)-2'-[(diphenylphosphino)oxy][1,1'-binaphthalen]-2-yl diphenylphosphinite-κP][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di-, stereoisomer (9CI) (CA INDEX NAME)  
MF C54 H46 Cl2 O2 P2 Ru  
CI CCS  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

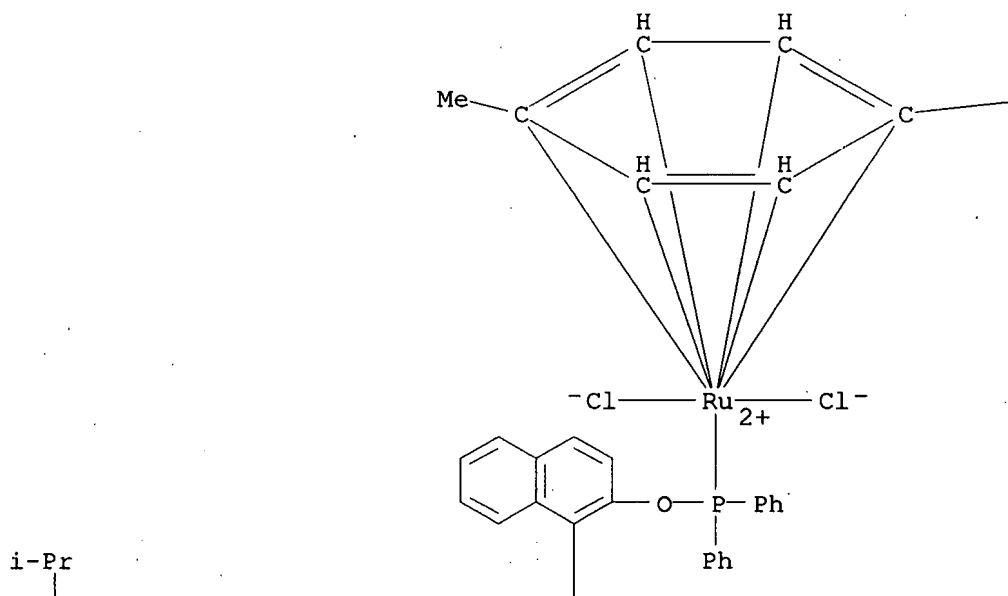
1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 22 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 868630-28-8 REGISTRY  
ED Entered STN: 22 Nov 2005  
CN Ruthenium, [ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl  
bis(diphenylphosphinite- $\kappa$ P)]]tetrachlorobis[(1,2,3,4,5,6- $\eta$ )-1-  
methyl-4-(1-methylethyl)benzene]di-, compd. with tetrahydrofuran (1:2)  
(9CI) (CA INDEX NAME)  
MF C64 H60 Cl4 O2 P2 Ru2 . 2 C4 H8 O  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

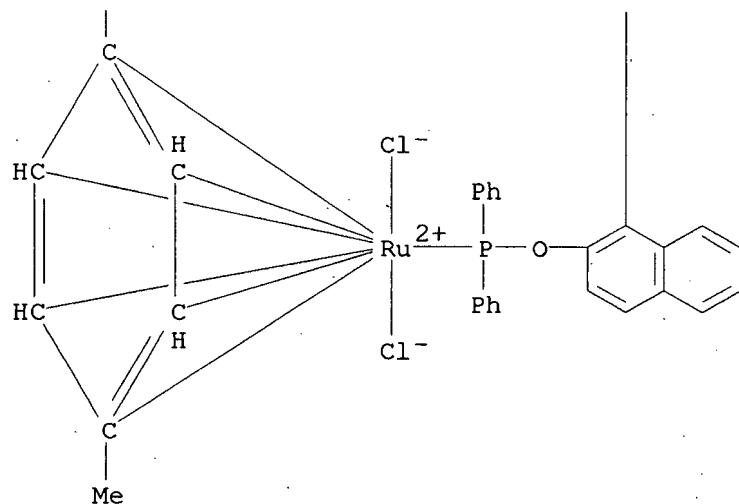
CRN 868630-27-7  
CMF C64 H60 Cl4 O2 P2 Ru2  
CCI CCS

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-Pr-i



CM 2

CRN 109-99-9

CMF C4 H8 O

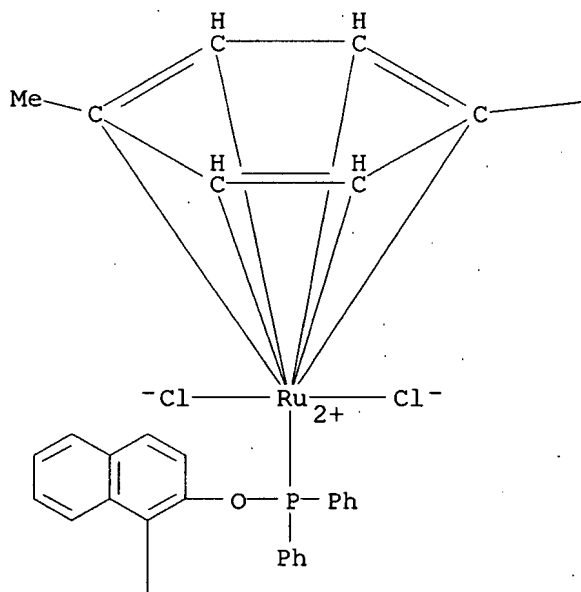


1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 23 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 868630-27-7 REGISTRY  
 ED Entered STN: 22 Nov 2005  
 CN Ruthenium, [ $\mu$ -[(1R)-[1,1'-binaphthalene]-2,2'-diyl  
 bis(diphenylphosphinite- $\kappa$ P)]]tetrachlorobis[(1,2,3,4,5,6- $\eta$ )-1-  
 methyl-4-(1-methylethyl)benzene]di- (9CI) (CA INDEX NAME)  
 MF C64 H60 Cl4 O2 P2 Ru2  
 CI CCS, COM  
 SR CA  
 LC STN Files: CA, CAPLUS

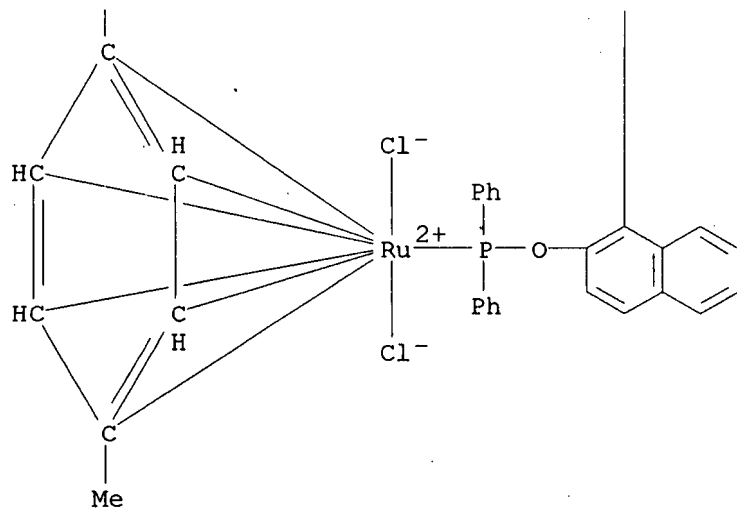
PAGE 1-A

i-Pr  
|



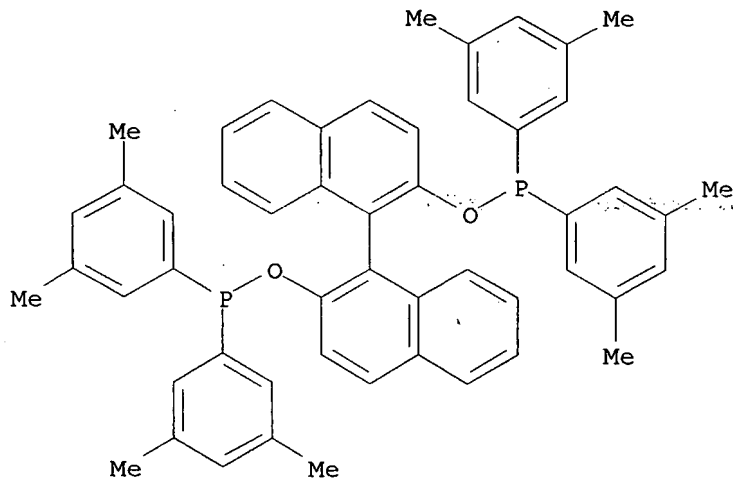
PAGE 1-B

—Pr-i



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 24 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 862377-18-2 REGISTRY  
ED Entered STN: 02 Sep 2005  
CN Phosphinous acid, bis(3,5-dimethylphenyl)-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C52 H48 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



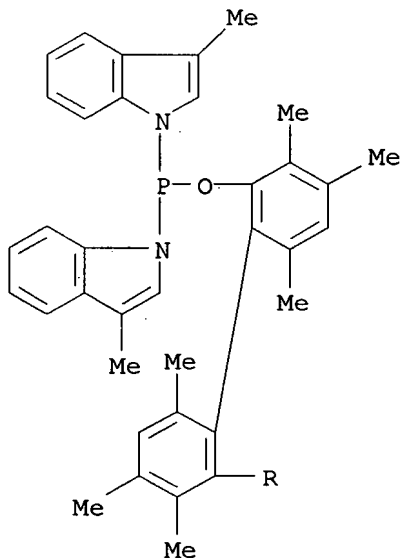
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1 REFERENCES IN FILE CA (1907 TO DATE)

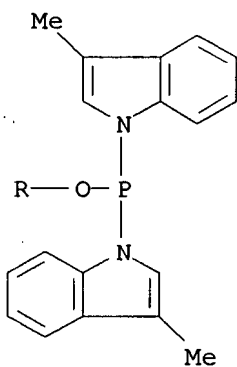
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 25 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 832673-34-4 REGISTRY  
ED Entered STN: 17 Feb 2005  
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 3,3',4,4',6,6'-  
hexamethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C54 H52 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS

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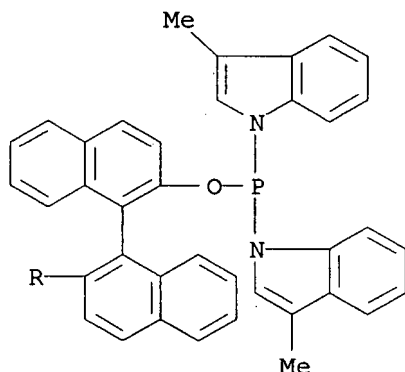


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

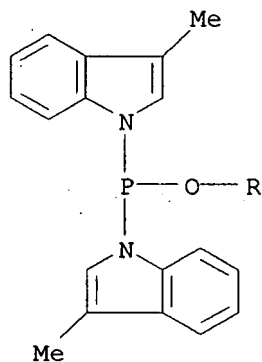
1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 26 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 832673-33-3 REGISTRY  
ED Entered STN: 17 Feb 2005  
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, [1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)  
MF C56 H44 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS

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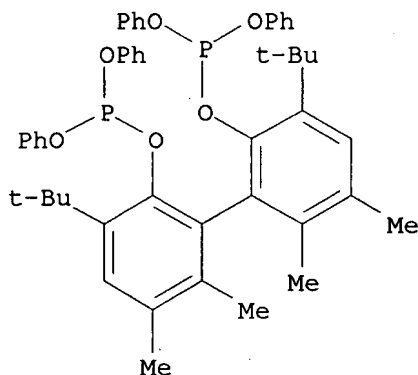


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 27 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 753016-20-5 REGISTRY

ED Entered STN: 28 Sep 2004  
CN Phosphorous acid, (1S)-3,3'-bis(1,1-dimethylethyl)-5,5',6,6'-  
tetramethyl[1,1'-biphenyl]-2,2'-diyl tetraphenyl ester (9CI) (CA INDEX  
NAME)  
MF C48 H52 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS

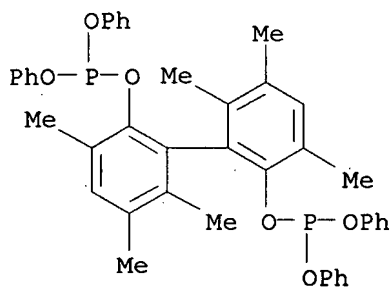


RW 753016-20-5

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 28 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 709674-92-0 REGISTRY  
ED Entered STN: 14 Jul 2004  
CN Phosphorous acid, 3,3',5,5',6,6'-hexamethyl[1,1'-biphenyl]-2,2'-diyl  
tetraphenyl ester (9CI) (CA INDEX NAME)  
MF C42 H40 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



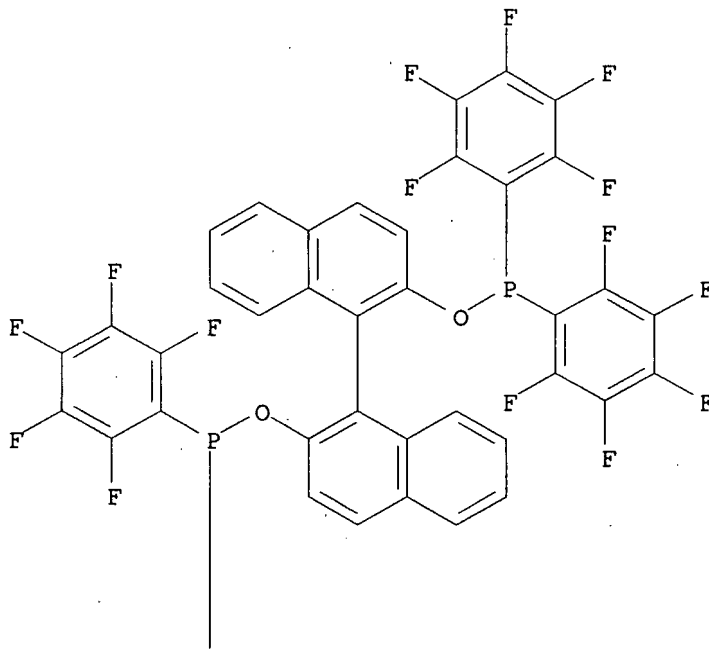
RW 709674-92-0

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

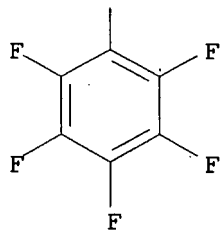
L3 ANSWER 29 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 694494-18-3 REGISTRY  
ED Entered STN: 17 Jun 2004  
CN Phosphine, [(1R)-[1,1'-binaphthalene]-2,2'-diylbis(oxy)]bis[bis(pentafluorophenyl)- (9CI) (CA INDEX NAME)  
MF C44 H12 F20 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

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RN 694494-18-3

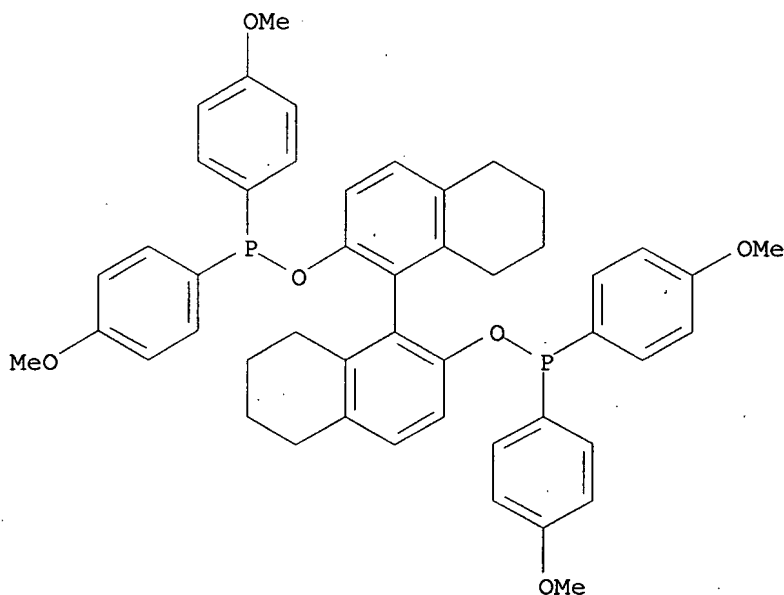
PAGE 2-A



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

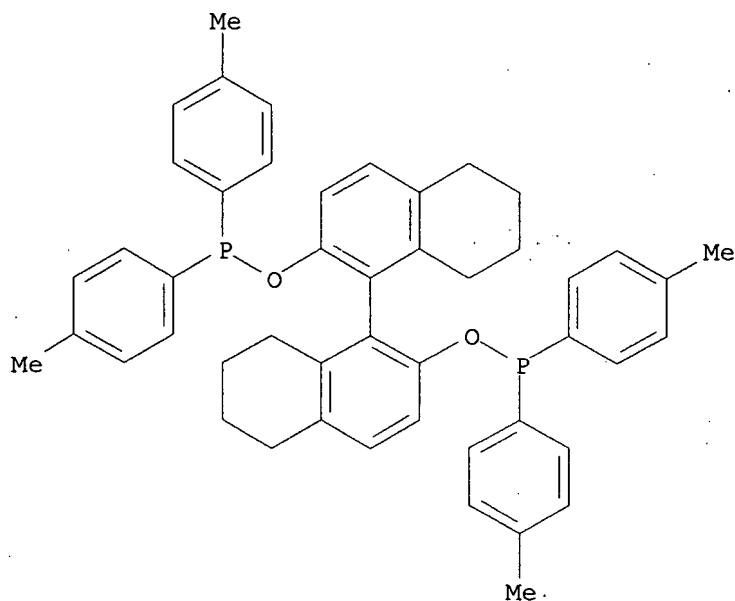
L3 ANSWER 30 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-10-7 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis(4-methoxyphenyl)-, (1S)-5,5',6,6',7,7',8,8'-  
octahydro[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C48 H48 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 31 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-09-4 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis(4-methylphenyl)-, (1S)-5,5',6,6',7,7',8,8'-  
octahydro[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C48 H48 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

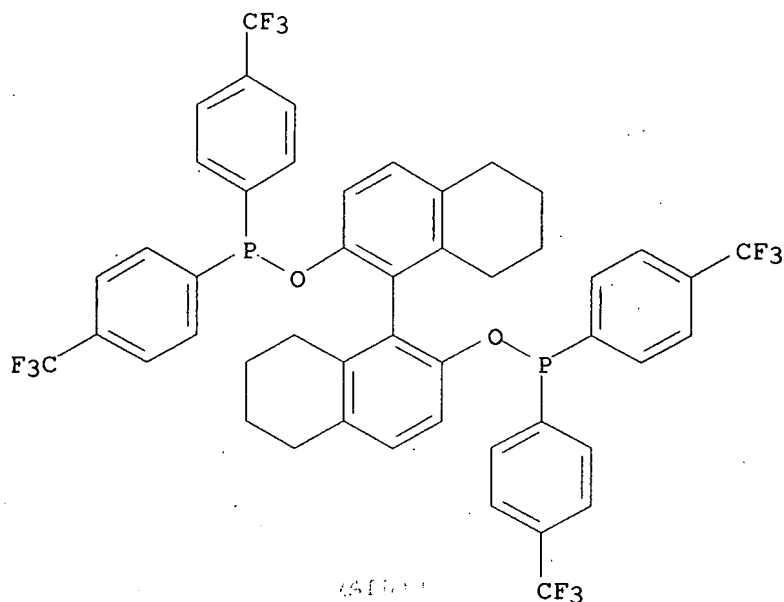


RN 651026-09-4

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 32 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-08-3 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis[4-(trifluoromethyl)phenyl]-, (1S)-  
5,5',6,6',7,7',8,8'-octahydro[1,1'-binaphthalene]-2,2'-diyl ester (9CI)  
(CA INDEX NAME)  
MF C48 H36 F12 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

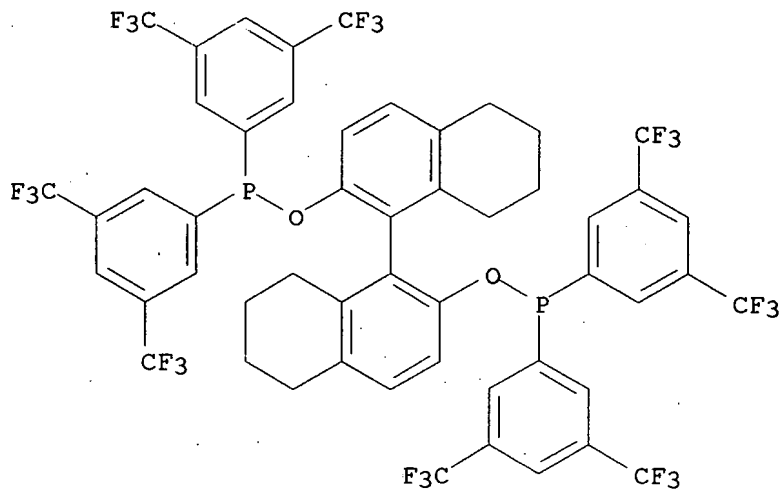


RN 651026-08-3

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 33 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-07-2 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis[3,5-bis(trifluoromethyl)phenyl]-,  
(1S)-5,5',6,6',7,7',8,8'-octahydro[1,1'-binaphthalene]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)  
MF C52 H32 F24 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

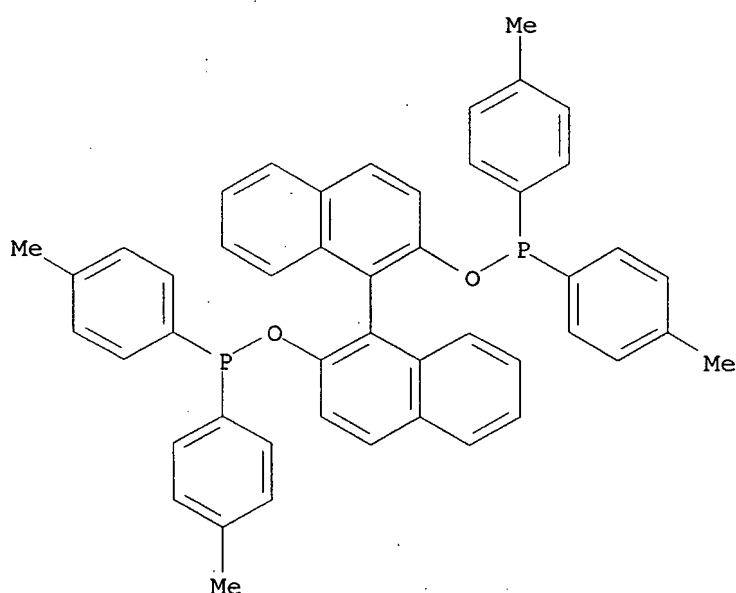


RN 651026-07-2

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 34 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-06-1 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis(4-methylphenyl)-, (1S)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C48 H40 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

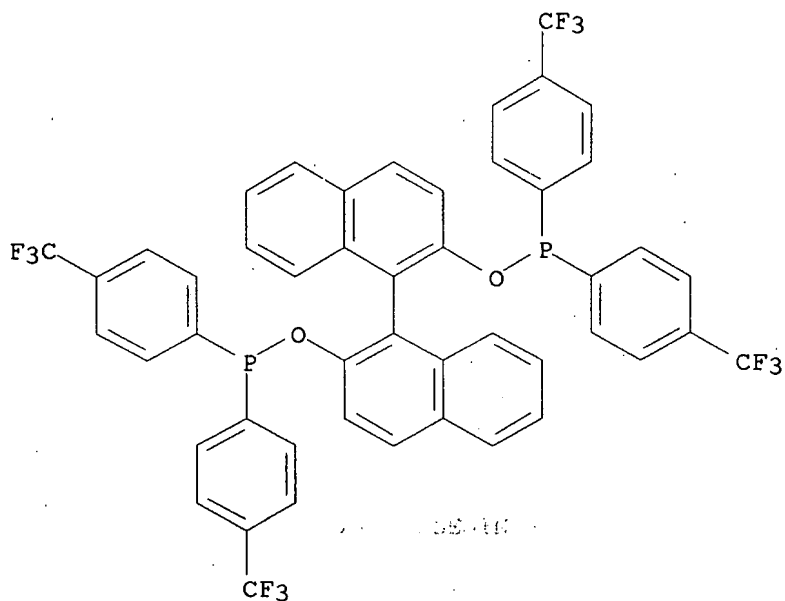


RN 651026-06-1

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 35 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-05-0 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis[4-(trifluoromethyl)phenyl]-, (1S)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C48 H28 F12 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT

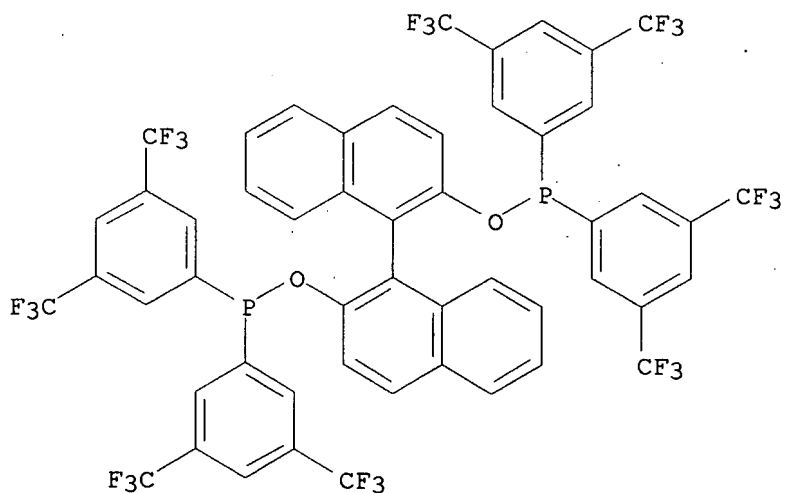


*RN 651026-05-0*

**\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\***

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2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

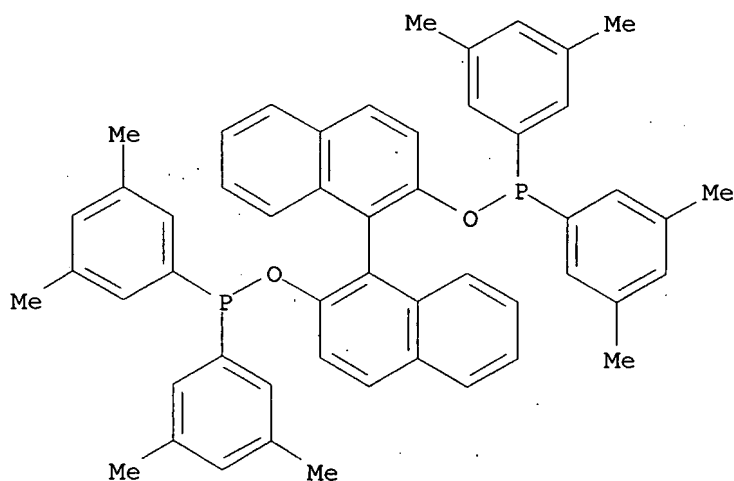
L3 ANSWER 36 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 651026-04-9 REGISTRY  
ED Entered STN: 17 Feb 2004  
CN Phosphinous acid, bis[3,5-bis(trifluoromethyl)phenyl]-,  
(1S)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C52 H24 F24 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

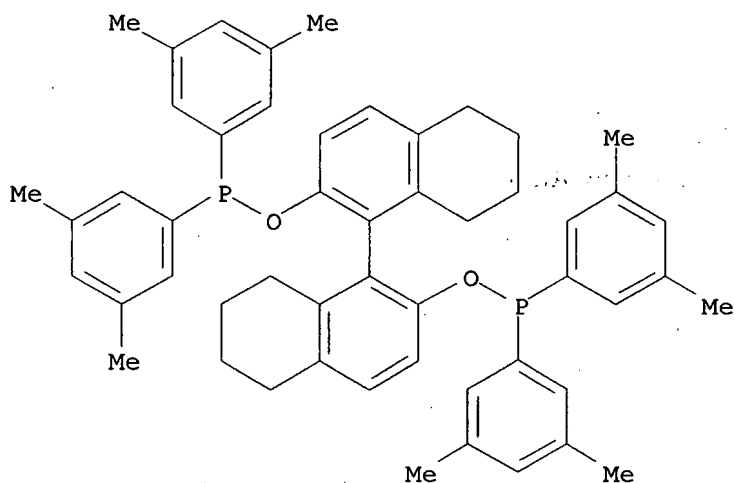
L3 ANSWER 37 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 511268-68-1 REGISTRY  
ED Entered STN: 06 May 2003  
CN Phosphinous acid, bis(3,5-dimethylphenyl)-, (1S)-[1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)  
MF C52 H48 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

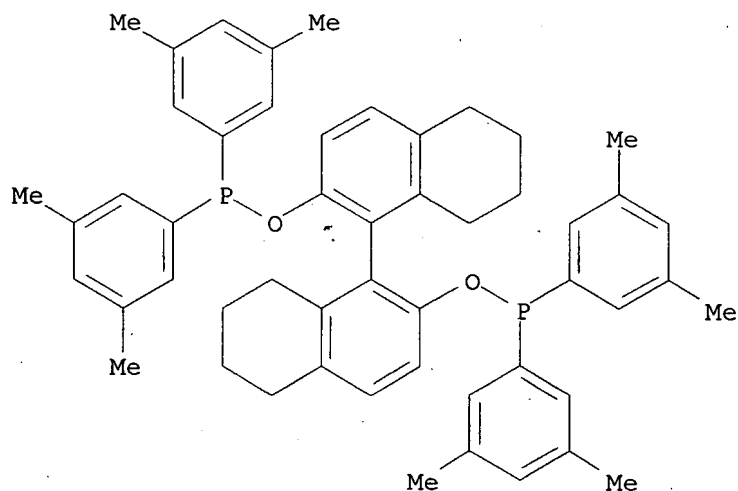
L3 ANSWER 38 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 511268-67-0 REGISTRY  
ED Entered STN: 06 May 2003  
CN Phosphinous acid, bis(3,5-dimethylphenyl)-, (1R)-5,5',6,6',7,7',8,8'-  
octahydro[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C52 H56 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

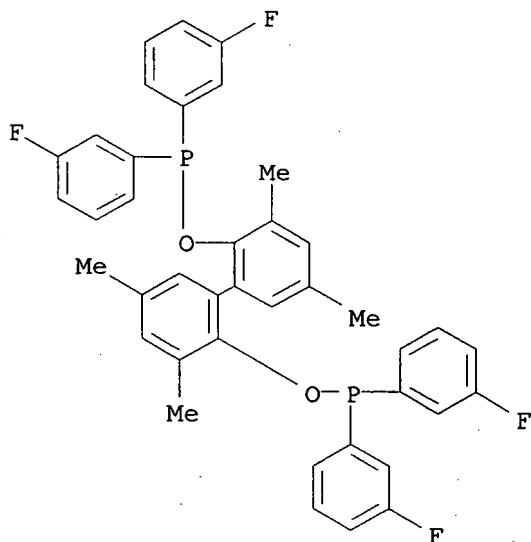
L3 ANSWER 39 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 511268-66-9 REGISTRY  
ED Entered STN: 06 May 2003  
CN Phosphinous acid, bis(3,5-dimethylphenyl)-, (1S)-5,5',6,6',7,7',8,8'-  
octahydro[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
DR 651026-11-8  
MF C52 H56 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

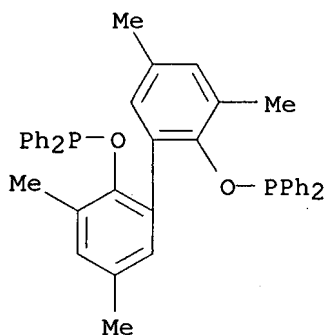
L3 ANSWER 40 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 509095-19-6 REGISTRY  
ED Entered STN: 02 May 2003  
CN Phosphinous acid, bis(3-fluorophenyl)-, 3,3',5,5'-tetramethyl[1,1'-  
biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C40 H32 F4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

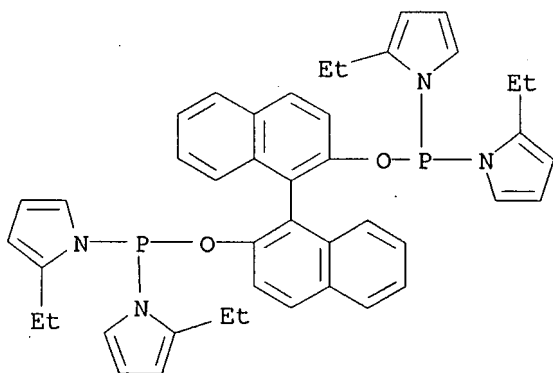
L3 ANSWER 41 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 509095-18-5 REGISTRY  
ED Entered STN: 02 May 2003  
CN Phosphinous acid, diphenyl-, 3,3',5,5'-tetramethyl[1,1'-biphenyl]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)  
MF C40 H36 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

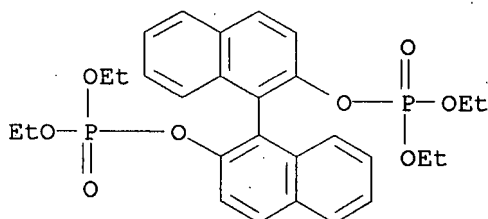
L3 ANSWER 42 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 500582-95-6 REGISTRY  
ED Entered STN: 25 Mar 2003  
CN Phosphinous acid, bis(2-ethyl-1H-pyrrol-1-yl)-, [1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)  
MF C44 H44 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 43 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 482288-70-0 REGISTRY  
ED Entered STN: 28 Jan 2003  
CN Phosphoric acid, [1,1'-binaphthalene]-2,2'-diyl tetraethyl ester (9CI)  
(CA INDEX NAME)  
MF C28 H32 O8 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



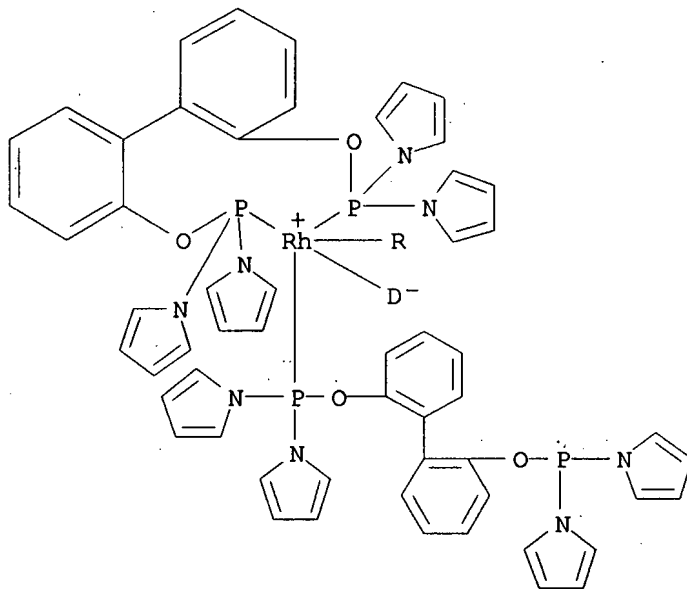
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

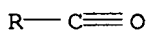
L3 ANSWER 44 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 471273-81-1 REGISTRY  
ED Entered STN: 07 Nov 2002  
CN Rhodium, [[1,1'-biphenyl]-2,2'-diyl bis(di-1H-pyrrol-1-ylphosphinite-κP)]carbonyl[2'-[(di-1H-pyrrol-1-ylphosphino)oxy][1,1'-biphenyl]-2-yl di-1H-pyrrol-1-ylphosphinite-κP]hydro-d-, (TB-5-34)- (9CI) (CA INDEX NAME)  
MF C57 H48 D N8 O5 P4 Rh  
CI CCS  
SR CA

LC STN Files: CA, CAPLUS

PAGE 1-A



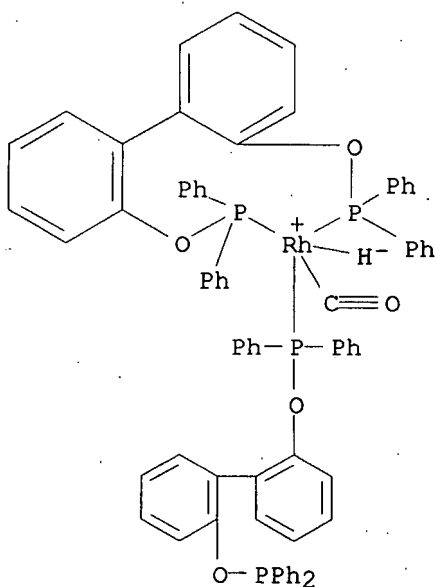
PAGE 2-A



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

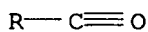
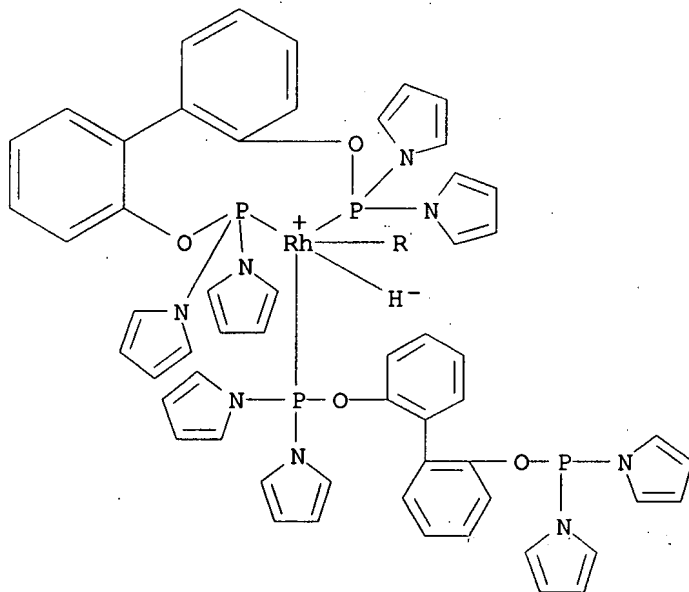
L3 ANSWER 45 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 471273-71-9 REGISTRY  
ED Entered STN: 07 Nov 2002  
CN Rhodium, [[1,1'-biphenyl]-2,2'-diyl bis(diphenylphosphinite-  
κP)]carbonyl[2'-[(diphenylphosphino)oxy][1,1'-biphenyl]-2-yl  
diphenylphosphinite-κP]hydro-, (TB-5-34)- (9CI) (CA INDEX NAME)  
MF C73 H57 O5 P4 Rh  
CI CCS  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

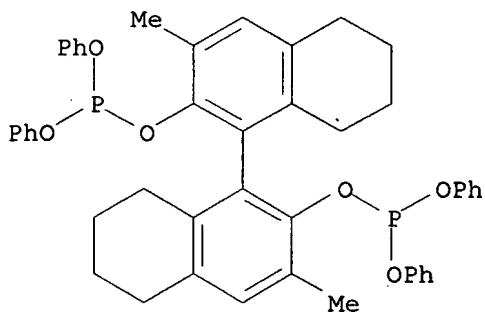
L3 ANSWER 46 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 471273-69-5 REGISTRY  
ED Entered STN: 07 Nov 2002  
CN Rhodium, [[1,1'-biphenyl]-2,2'-diyl bis(di-1H-pyrrol-1-ylphosphinite- $\kappa$ P)]carbonyl[2'-[(di-1H-pyrrol-1-ylphosphino)oxy][1,1'-biphenyl]-2-yl di-1H-pyrrol-1-ylphosphinite- $\kappa$ P]hydro-, (TB-5-34)- (9CI) (CA INDEX NAME)  
MF C57 H49 N8 O5 P4 Rh  
CI CCS  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

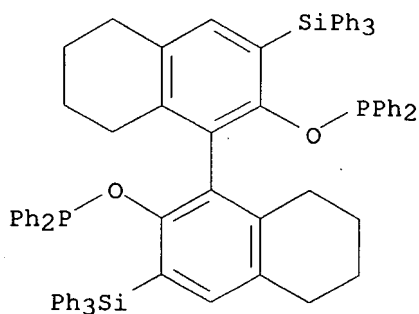
L3 ANSWER 47 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428877-82-1 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphorous acid, (1R)-5,5',6,6',7,7',8,8'-octahydro-3,3'-dimethyl[1,1'-binaphthalene]-2,2'-diyl tetraphenyl ester (9CI) (CA INDEX NAME)  
MF C46 H44 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

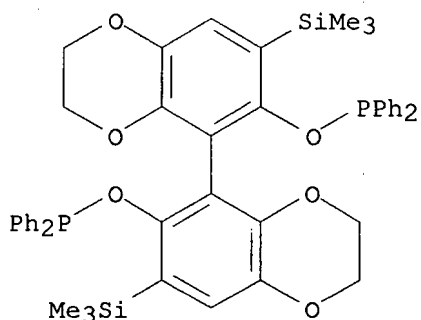
L3 ANSWER 48 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428877-25-2 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-5,5',6,6',7,7',8,8'-octahydro-3,3'-bis(triphenylsilyl)[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C80 H68 O2 P2 Si2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

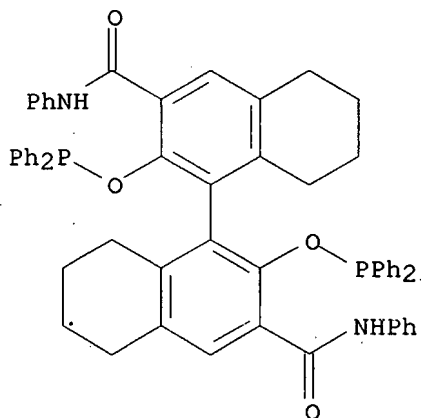
L3 ANSWER 49 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428877-24-1 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (5R)-2,2',3,3'-tetrahydro-7,7'-bis(trimethylsilyl)[5,5'-bi-1,4-benzodioxin]-6,6'-diyl ester (9CI) (CA INDEX NAME)  
MF C46 H48 O6 P2 Si2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 50 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428877-23-0 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-5,5',6,6',7,7',8,8'-octahydro-3,3'-bis[(phenylamino)carbonyl][1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C58 H50 N2 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

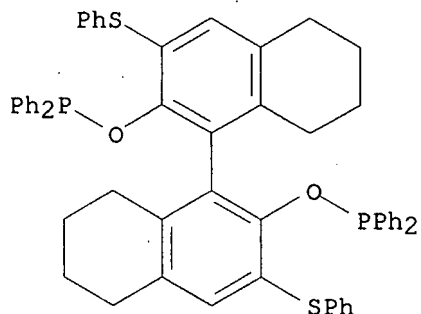


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 51 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428877-22-9 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-5,5',6,6',7,7',8,8'-octahydro-3,3'-

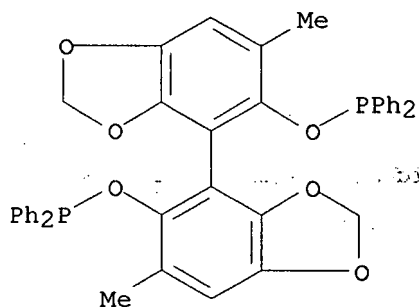
bis(phenylthio)[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C56 H48 O2 P2 S2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 52 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428877-21-8 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (4R)-6,6'-dimethyl[4,4'-bi-1,3-benzodioxole]-  
5,5'-diyl ester (9CI) (CA INDEX NAME)  
MF C40 H32 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

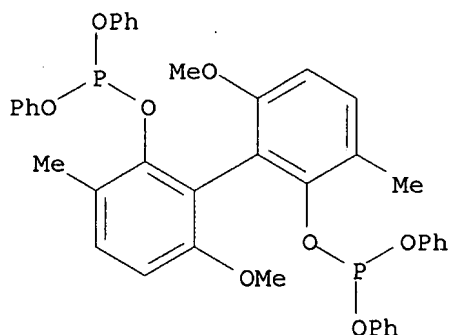


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 53 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428876-45-3 REGISTRY  
ED Entered STN: 12 Jun 2002

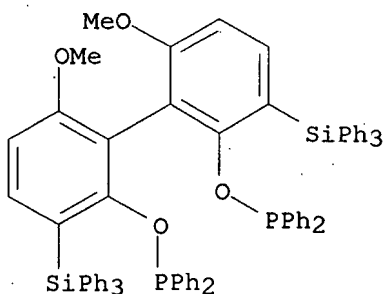
CN Phosphorous acid, (1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl tetraphenyl ester (9CI) (CA INDEX NAME)  
 MF C40 H36 O8 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 54 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 428875-91-6 REGISTRY  
 ED Entered STN: 12 Jun 2002  
 CN Phosphinous acid, diphenyl-, (1R)-6,6'-dimethoxy-3,3'-bis(triphenylsilyl)[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
 MF C74 H60 O4 P2 Si2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

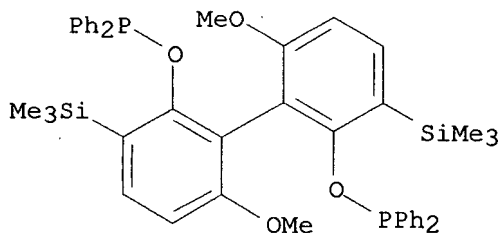


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 55 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 428875-90-5 REGISTRY

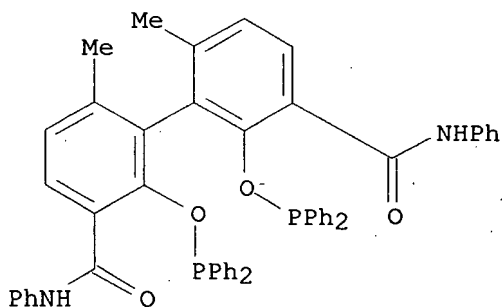
ED Entered STN: 12 Jun 2002  
 CN Phosphinous acid, diphenyl-, (1R)-6,6'-dimethoxy-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
 MF C44 H48 O4 P2 Si2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 56 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 428875-89-2 REGISTRY  
 ED Entered STN: 12 Jun 2002  
 CN Phosphinous acid, diphenyl-, (1R)-6,6'-dimethyl-3,3'-bis[(phenylamino)carbonyl][1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
 MF C52 H42 N2 O4 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

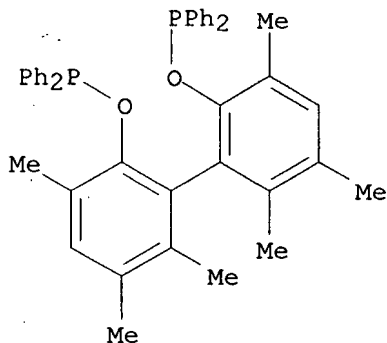


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 57 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 428875-87-0 REGISTRY  
 ED Entered STN: 12 Jun 2002

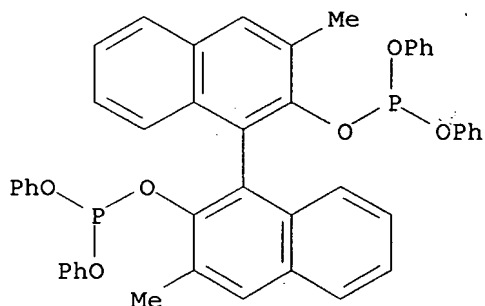
CN Phosphinous acid, diphenyl-, (1R)-3,3',5,5',6,6'-hexamethyl[1,1'-biphenyl]-  
2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C42 H40 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 58 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428875-58-5 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphorous acid, (1R)-3,3'-dimethyl[1,1'-binaphthalene]-2,2'-diyl  
tetraphenyl ester (9CI) (CA INDEX NAME)  
MF C46 H36 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

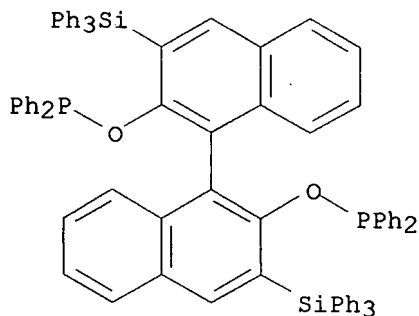


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 59 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

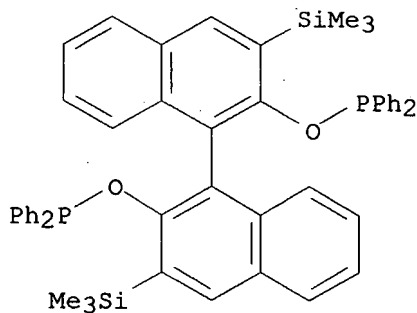
RN 428875-00-7 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-3,3'-bis(triphenylsilyl)[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C80 H60 O2 P2 Si2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

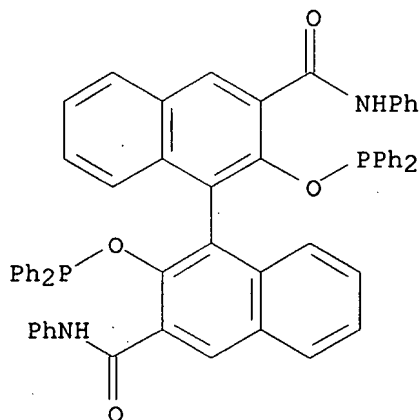
L3 ANSWER 60 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428874-99-1 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-3,3'-bis(trimethylsilyl)[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C50 H48 O2 P2 Si2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

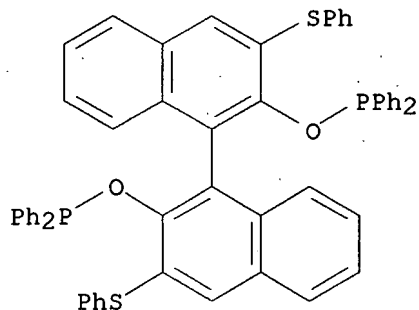
L3 ANSWER 61 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428874-98-0 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-3,3'-bis[(phenylamino)carbonyl][1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C58 H42 N2 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

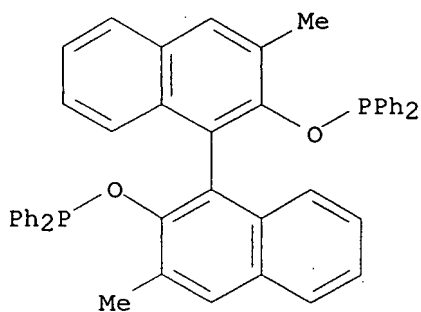
L3 ANSWER 62 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428874-97-9 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-3,3'-bis(phenylthio)[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C56 H40 O2 P2 S2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

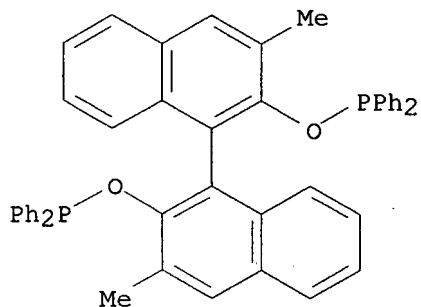
L3 ANSWER 63 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428874-96-8 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1R)-3,3'-dimethyl[1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)  
MF C46 H36 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

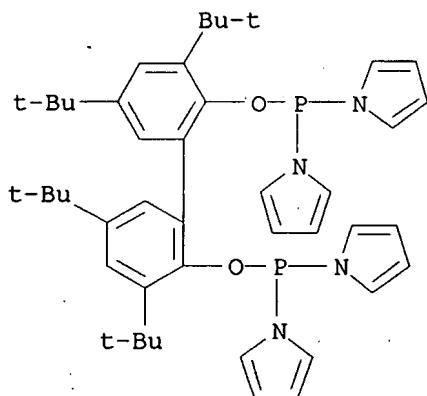
L3 ANSWER 64 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 428874-70-8 REGISTRY  
ED Entered STN: 12 Jun 2002  
CN Phosphinous acid, diphenyl-, (1S)-3,3'-dimethyl[1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)  
MF C46 H36 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

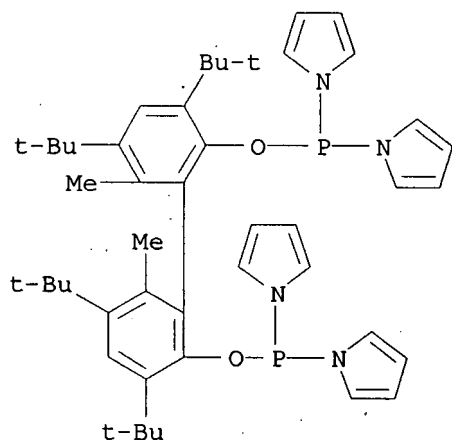
L3 ANSWER 65 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 397886-87-2 REGISTRY  
ED Entered STN: 04 Mar 2002  
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)[1,1'-  
biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)  
MF C44 H56 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

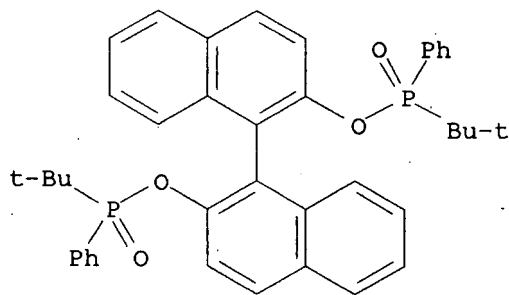
L3 ANSWER 66 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 397886-86-1 REGISTRY  
ED Entered STN: 04 Mar 2002  
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)-6,6'-  
dimethyl[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI)  
(CA INDEX NAME)  
MF C46 H60 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 67 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 331412-29-4 REGISTRY  
 ED Entered STN: 16 Apr 2001  
 CN Phosphinic acid, (1,1-dimethylethyl)phenyl-, (1R)-[1,1'-binaphthalene]-  
 2,2'-diyl ester, [P(R),P'(S)]- (9CI) (CA INDEX NAME)  
 MF C40 H40 O4 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, CASREACT

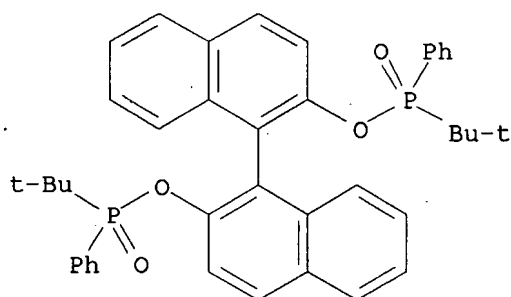


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 68 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 331412-28-3 REGISTRY  
 ED Entered STN: 16 Apr 2001  
 CN Phosphinic acid, (1,1-dimethylethyl)phenyl-, (1R)-[1,1'-binaphthalene]-  
 2,2'-diyl ester, [P(S),P'(S)]- (9CI) (CA INDEX NAME)

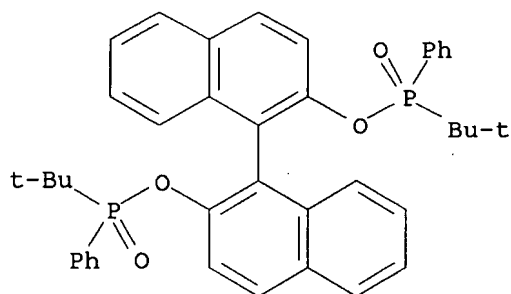
MF C40 H40 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 69 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 331412-26-1 REGISTRY  
ED Entered STN: 16 Apr 2001  
CN Phosphinic acid, (1,1-dimethylethyl)phenyl-, (1S)-[1,1'-binaphthalene]-2,2'-diyl ester, [P(R),P'(R)]- (9CI) (CA INDEX NAME)  
MF C40 H40 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT



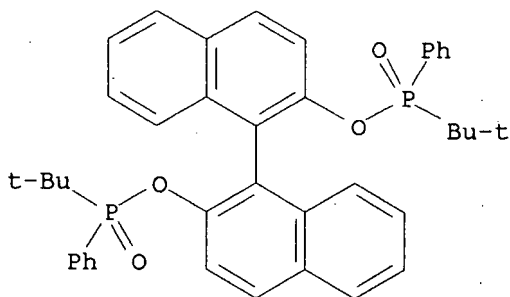
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 70 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 331248-60-3 REGISTRY  
ED Entered STN: 13 Apr 2001  
CN Phosphinic acid, (1,1-dimethylethyl)phenyl-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester, [P(R),P'(R)]- (9CI) (CA INDEX NAME)  
MF C40 H40 O4 P2

SR CA

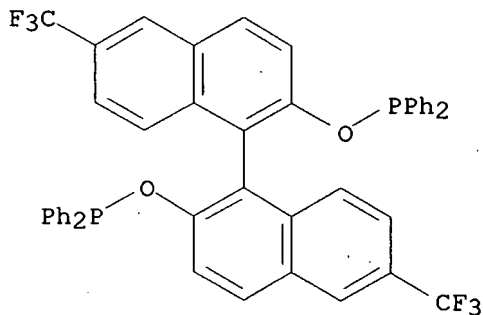
LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 71 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 271249-10-6 REGISTRY  
ED Entered STN: 19 Jun 2000  
CN Phosphinous acid, diphenyl-, (1R)-6,6'-bis(trifluoromethyl)[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C46 H30 F6 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS

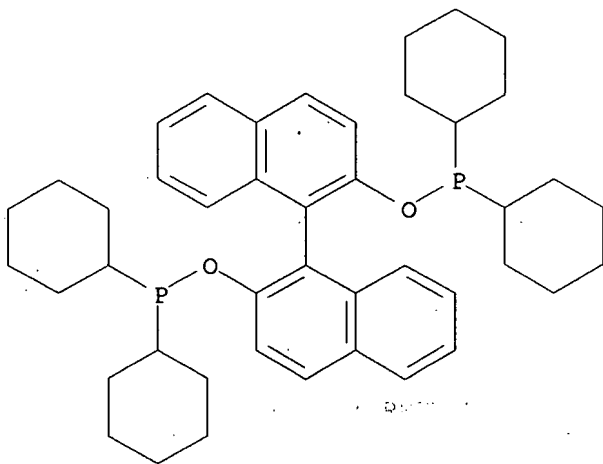


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 72 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 249626-66-2 REGISTRY  
ED Entered STN: 01 Dec 1999  
CN Phosphinous acid, dicyclohexyl-, (1S)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
OTHER NAMES:

CN (S)-[1,1'-Binaphthalene]-2,2'-diyl bis(dicyclohexylphosphinite)  
MF C44 H56 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



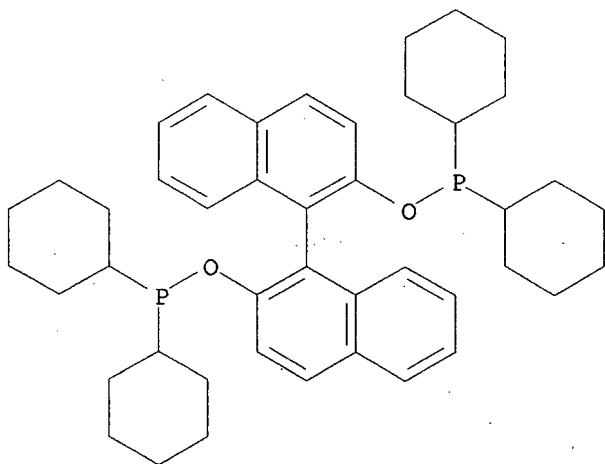
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 73 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 249626-65-1 REGISTRY  
ED Entered STN: 01 Dec 1999  
CN Phosphinous acid, dicyclohexyl-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)

OTHER NAMES:

CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis(dicyclohexylphosphinite)  
MF C44 H56 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



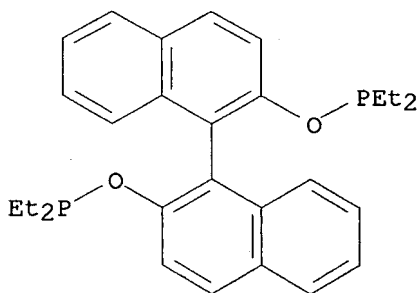
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 74 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 249626-64-0 REGISTRY  
ED Entered STN: 01 Dec 1999  
CN Phosphinous acid, diethyl-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)

OTHER NAMES:

CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis(diethylphosphinite)  
MF C28 H32 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 75 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 249626-63-9 REGISTRY  
ED Entered STN: 01 Dec 1999

CN Phosphinous acid, bis[3,5-bis(trimethylsilyl)phenyl]-,  
(1R)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

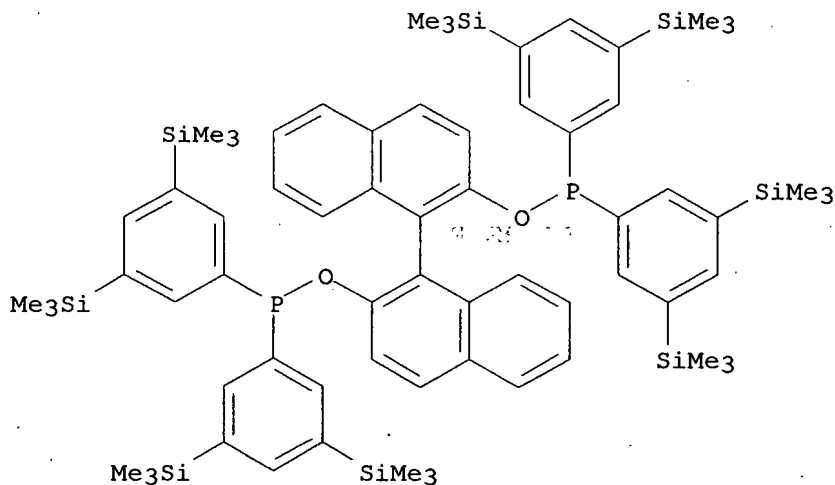
OTHER NAMES:

CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis[bis(3,5-  
bis(trimethylsilyl)phenyl)phosphinite]

MF C68 H96 O2 P2 Si8

SR CA

LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 76 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

RN 249626-61-7 REGISTRY

ED Entered STN: 01 Dec 1999

CN Phosphinous acid, bis(4-fluorophenyl)-, (1R)-[1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)

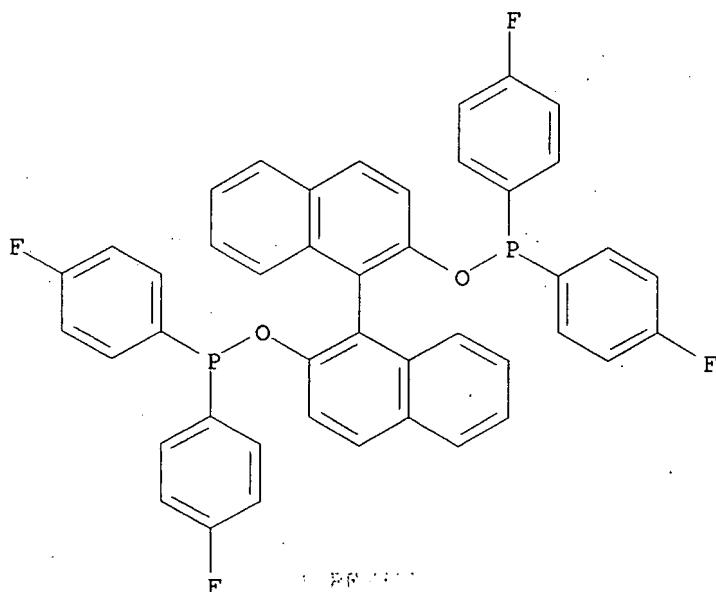
OTHER NAMES:

CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis[bis(4-fluorophenyl)phosphinite]

MF C44 H28 F4 O2 P2

SR CA

LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 77 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

RN 249626-60-6 REGISTRY

ED Entered STN: 01 Dec 1999

CN Phosphinous acid, bis[4-(trifluoromethyl)phenyl]-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

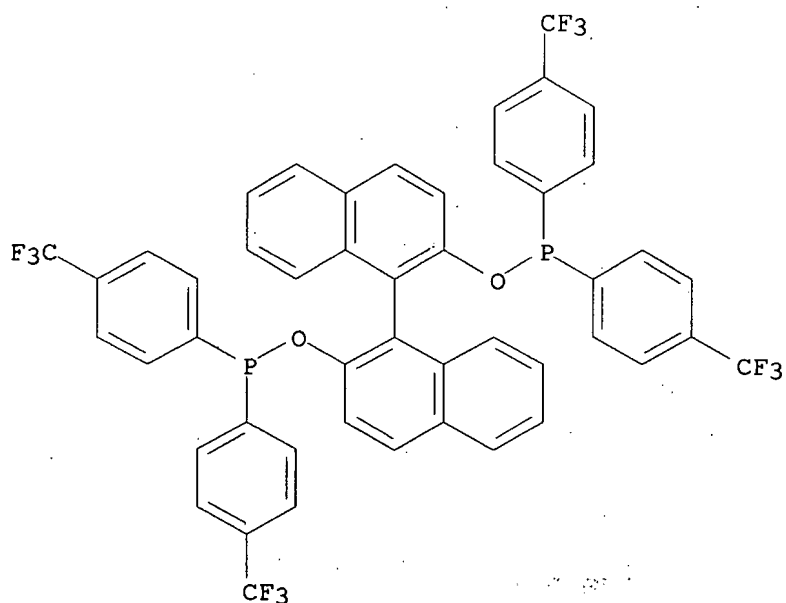
OTHER NAMES:

CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis[bis(4-(trifluoromethyl)phenyl)phosphinite]

MF C48 H28 F12 O2 P2

SR CA

LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 78 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

RN 249626-59-3 REGISTRY

ED Entered STN: 01 Dec 1999

CN Phosphinous acid, bis(3,5-difluorophenyl)-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

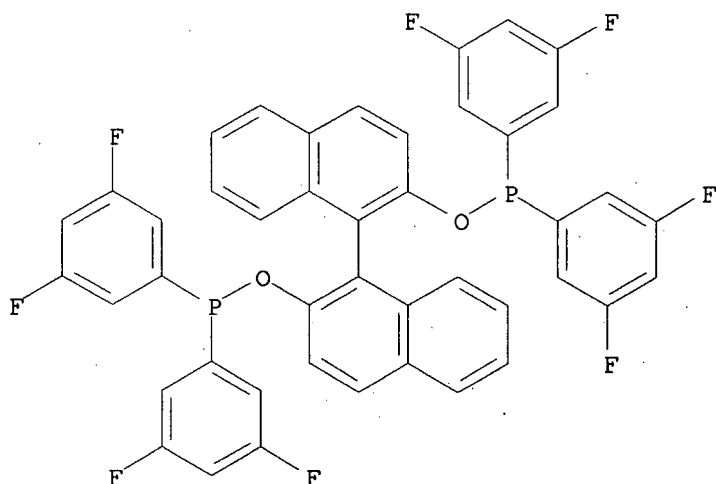
OTHER NAMES:

CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis[bis(3,5-difluorophenyl)phosphinite]

MF C44 H24 F8 O2 P2

SR CA

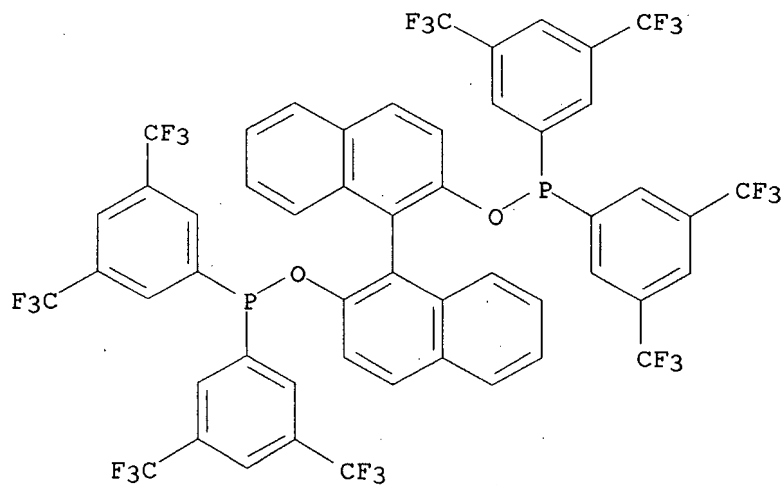
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 79 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 249626-58-2 REGISTRY  
ED Entered STN: 01 Dec 1999  
CN Phosphinous acid, bis[3,5-bis(trifluoromethyl)phenyl]-,  
(1R)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis[bis(3,5-  
bis(trifluoromethyl)phenyl)phosphinite]  
MF C52 H24 F24 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS

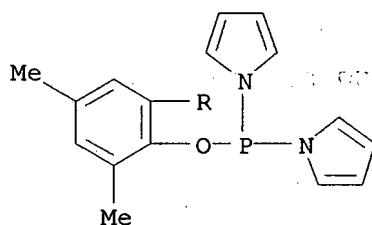


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

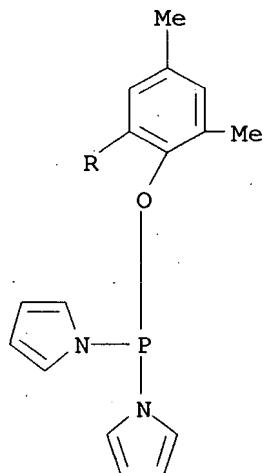
1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 80 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-94-5 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3',5,5'-tetramethyl[1,1'-biphenyl]-  
2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C32 H32 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

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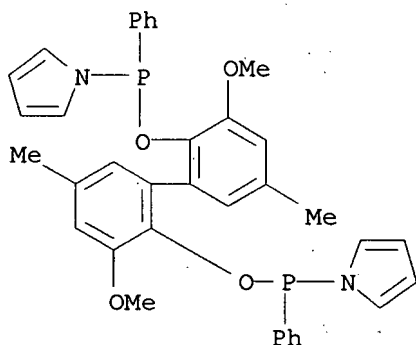


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 81 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

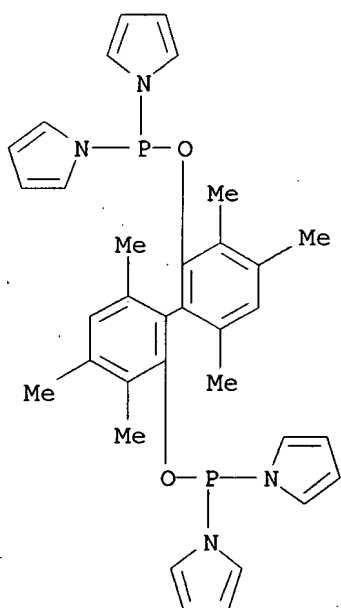
RN 247130-93-4 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, phenyl-1H-pyrrol-1-yl-, 3,3'-dimethoxy-5,5'-  
dimethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C36 H34 N2 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

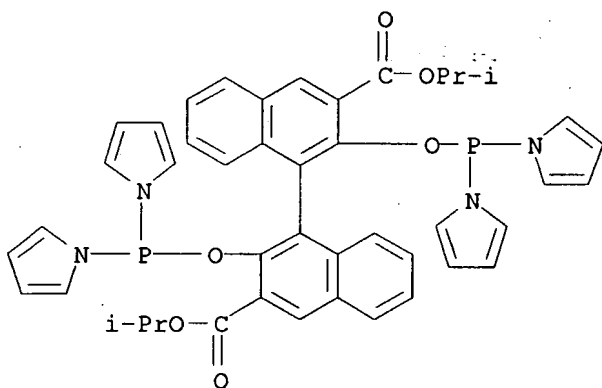
L3 ANSWER 82 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-92-3 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3',4,4',6,6'-hexamethyl[1,1'-  
biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C34 H36 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

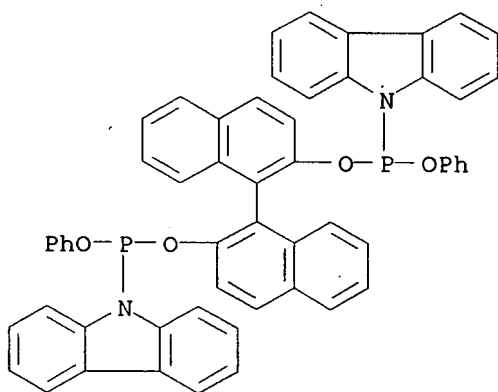
L3 ANSWER 83 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-91-2 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[(di-1H-pyrrol-1-ylphosphino)oxy]-, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)  
MF C44 H40 N4 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

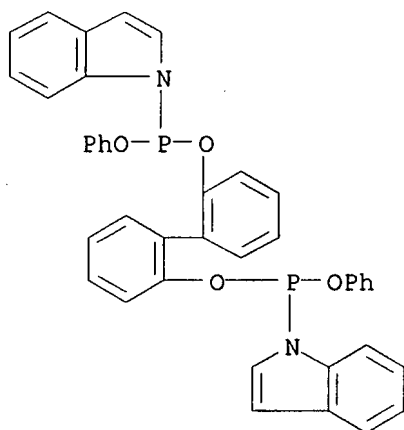
L3 ANSWER 84 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-90-1 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphonous acid, 9H-carbazol-9-yl-, [1,1'-binaphthalene]-2,2'-diyl  
diphenyl ester (9CI) (CA INDEX NAME)  
MF C56 H38 N2 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

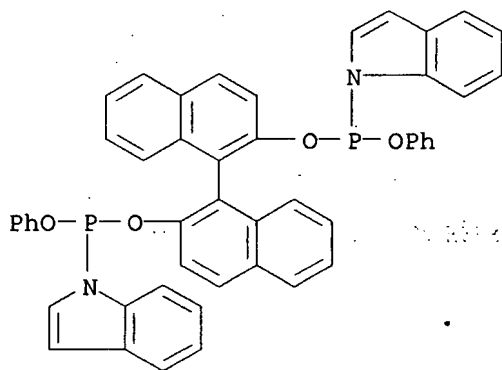
L3 ANSWER 85 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-89-8 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphonous acid, 1H-indol-1-yl-, [1,1'-biphenyl]-2,2'-diyl diphenyl ester  
(9CI) (CA INDEX NAME)  
MF C40 H30 N2 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 86 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-88-7 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphonous acid, 1H-indol-1-yl-, [1,1'-binaphthalene]-2,2'-diyl diphenyl  
ester (9CI) (CA INDEX NAME)  
MF C48 H34 N2 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

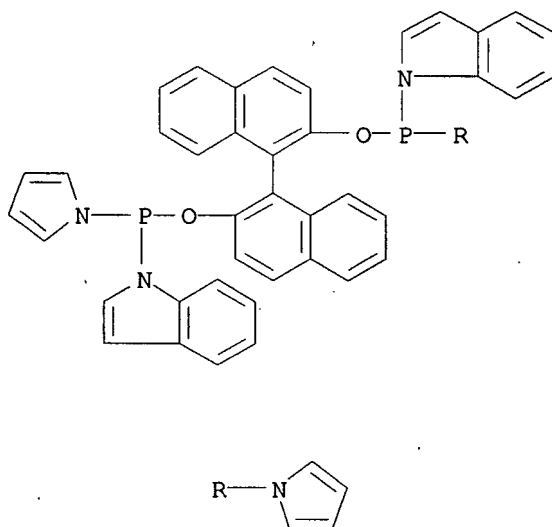


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 87 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-85-4 REGISTRY  
ED Entered STN: 12 Nov 1999

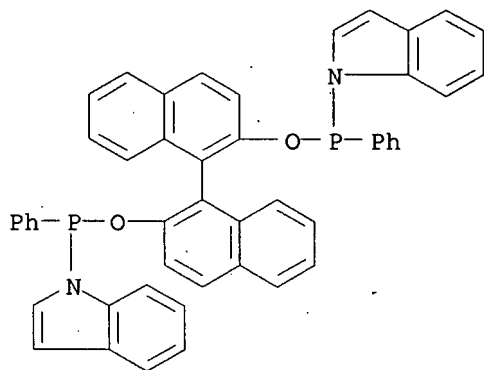
CN Phosphinous acid, 1H-indol-1-yl-1H-pyrrol-1-yl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
 MF C44 H32 N4 O2 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

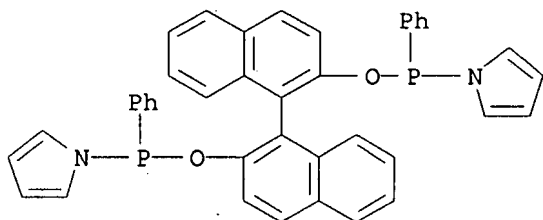
L3 ANSWER 88 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 247130-84-3 REGISTRY  
 ED Entered STN: 12 Nov 1999  
 CN Phosphinous acid, 1H-indol-1-ylphenyl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
 MF C48 H34 N2 O2 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

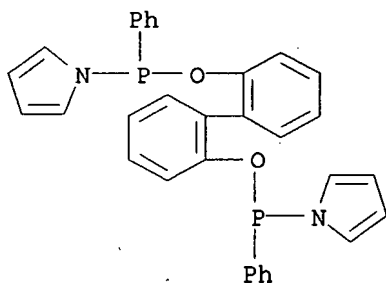
L3 ANSWER 89 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-82-1 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, phenyl-1H-pyrrol-1-yl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C40 H30 N2 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

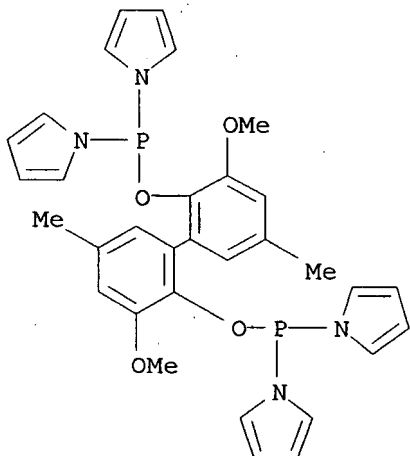
L3 ANSWER 90 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-78-5 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, phenyl-1H-pyrrol-1-yl-, [1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C32 H26 N2 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

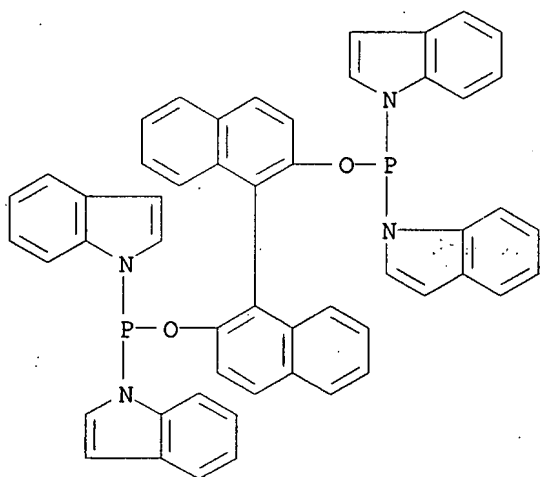
L3 ANSWER 91 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-76-3 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3'-dimethoxy-5,5'-dimethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C32 H32 N4 O4 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

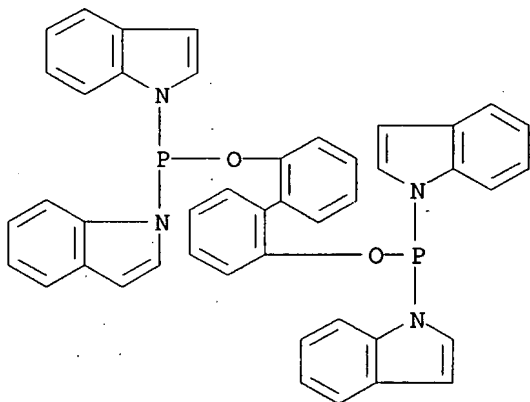
L3 ANSWER 92 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-65-0 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, P,P-di-1H-indol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphinous acid, di-1H-indol-1-yl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI)  
MF C52 H36 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 93 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-64-9 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, di-1H-indol-1-yl-, [1,1'-biphenyl]-2,2'-diyl ester (9CI)  
(CA INDEX NAME)  
MF C44 H32 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

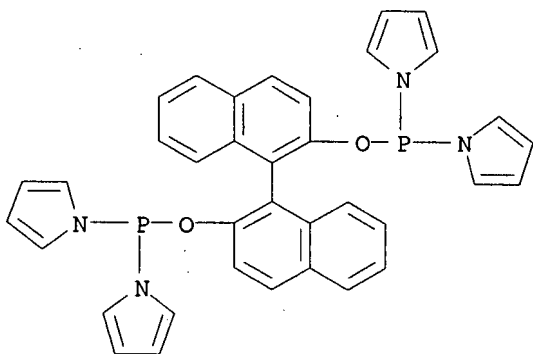


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 94 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

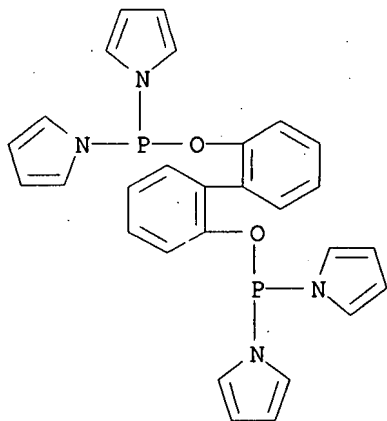
RN 247130-62-7 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphinous acid, di-1H-pyrrol-1-yl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI)  
MF C36 H28 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

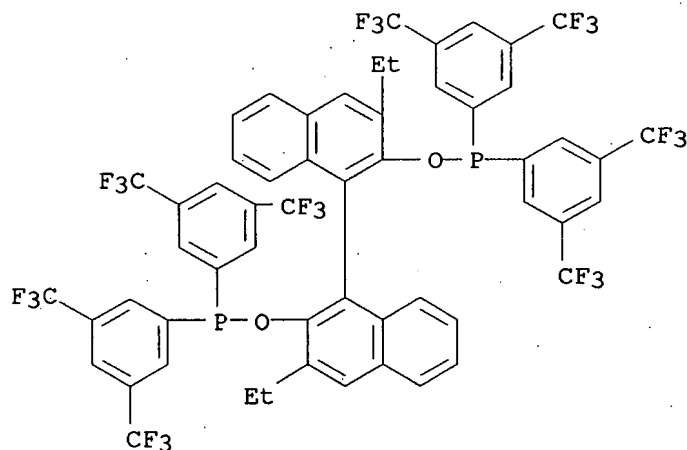
L3 ANSWER 95 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247130-61-6 REGISTRY  
ED Entered STN: 12 Nov 1999  
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphinous acid, di-1H-pyrrol-1-yl-, [1,1'-biphenyl]-2,2'-diyl ester (9CI)  
MF C28 H24 N4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 96 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 202124-68-3 REGISTRY  
ED Entered STN: 04 Mar 1998  
CN Phosphinous acid, bis[3,5-bis(trifluoromethyl)phenyl]-,  
3,3'-diethyl[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C56 H32 F24 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

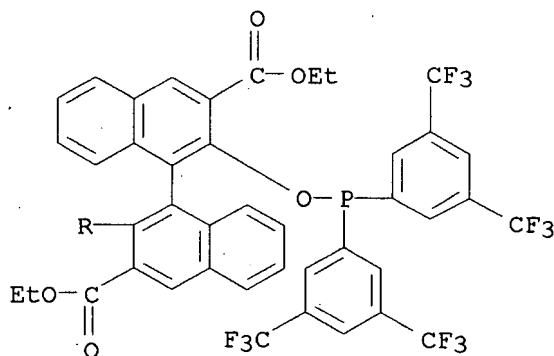


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

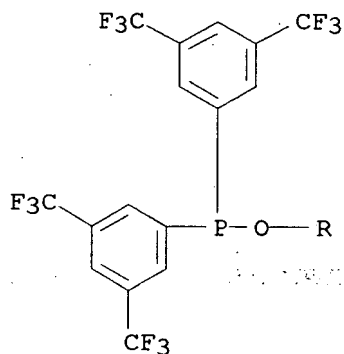
1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 97 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 202124-66-1 REGISTRY  
ED Entered STN: 04 Mar 1998  
CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[[bis[3,5-bis(trifluoromethyl)phenyl]phosphino]oxy]-, diethyl ester (9CI) (CA INDEX NAME)  
MF C58 H32 F24 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

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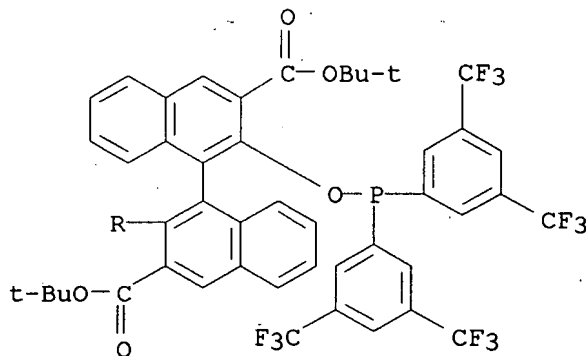
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

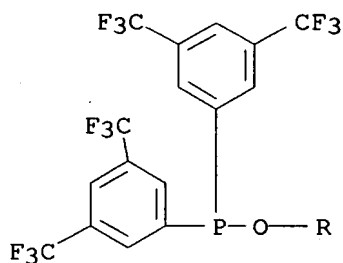
L3 ANSWER 98 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 202124-64-9 REGISTRY  
ED Entered STN: 04 Mar 1998  
CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[[bis[3,5-bis(trifluoromethyl)phenyl]phosphino]oxy]-, bis(1,1-dimethylethyl) ester

(9CI) (CA INDEX NAME)  
MF C62 H40 F24 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

PAGE 1-A



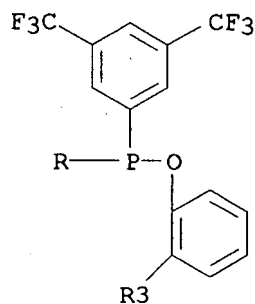
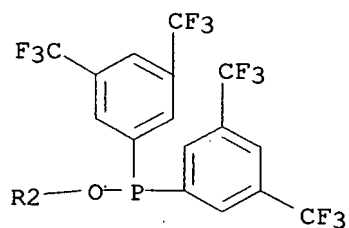
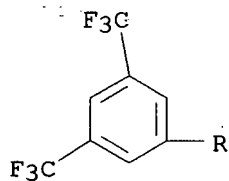
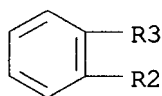
PAGE 2-A



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

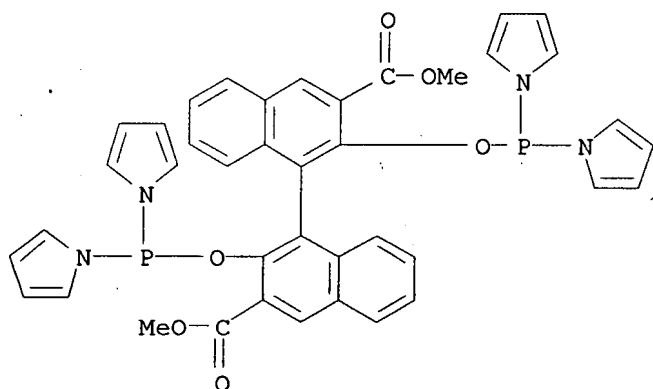
L3 ANSWER 99 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 202124-59-2 REGISTRY  
ED Entered STN: 04 Mar 1998  
CN Phosphinous acid, bis[3,5-bis(trifluoromethyl)phenyl]-,  
[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C44 H20 F24 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 100 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 202124-56-9 REGISTRY  
ED Entered STN: 04 Mar 1998  
CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[(di-1H-pyrrol-1-ylphosphino)oxy]-, dimethyl ester (9CI) (CA INDEX NAME)  
MF C40 H32 N4 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL

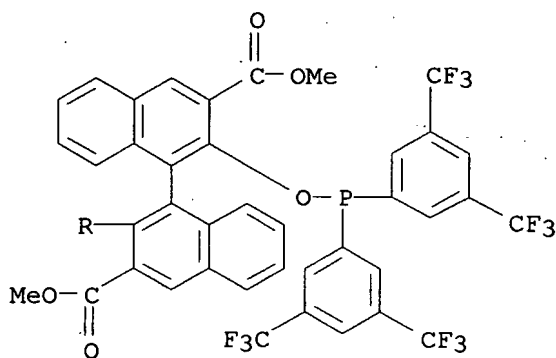


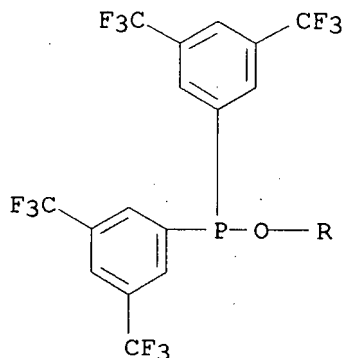
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 101 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 202124-55-8 REGISTRY  
ED Entered STN: 04 Mar 1998  
CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[[bis[3,5-bis(trifluoromethyl)phenyl]phosphino]oxy]-, dimethyl ester (9CI) (CA INDEX NAME)  
MF C56 H28 F24 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL

PAGE 1-A

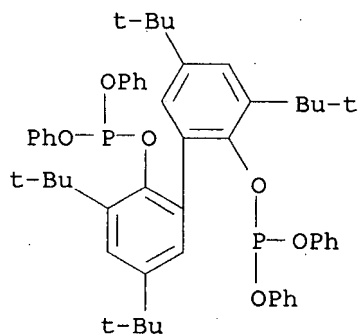




\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 102 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 198979-83-8 REGISTRY  
ED Entered STN: 24 Dec 1997  
CN Phosphorous acid, 3,3',5,5'-tetrakis(1,1-dimethylethyl)[1,1'-biphenyl]-  
2,2'-diyl tetraphenyl ester (9CI) (CA INDEX NAME)  
MF C52 H60 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

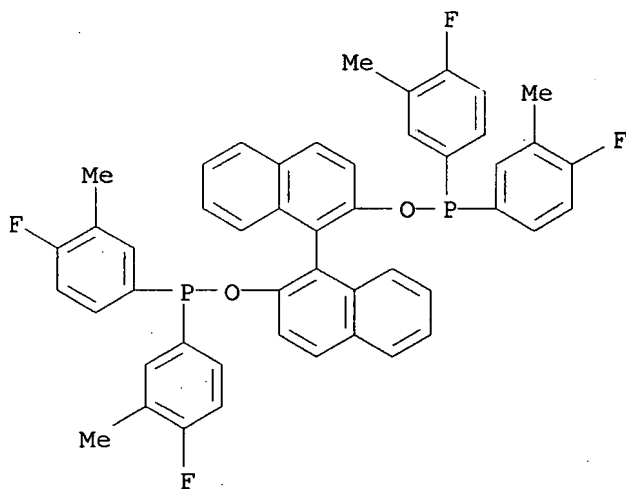
2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 103 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-77-9 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(4-fluoro-3-methylphenyl)-, [1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)

MF C48 H36 F4 O2 P2

SR CA

LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 104 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

RN 179259-76-8 REGISTRY

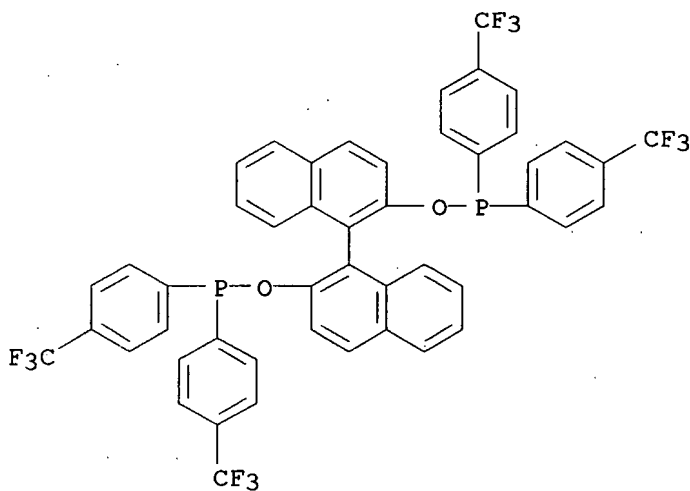
ED Entered STN: 08 Aug 1996

CN Phosphinous acid, bis[4-(trifluoromethyl)phenyl]-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

MF C48 H28 F12 O2 P2

SR CA

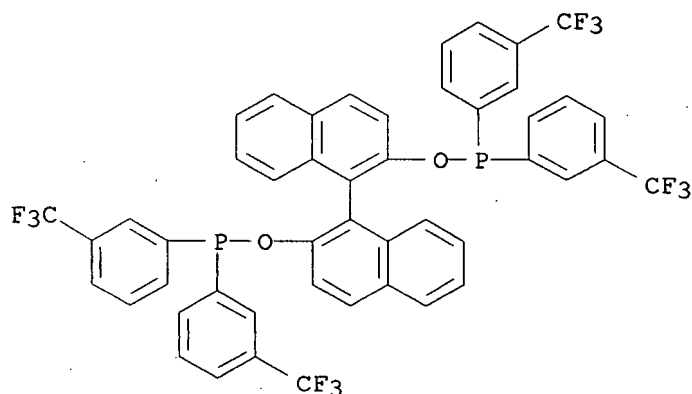
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

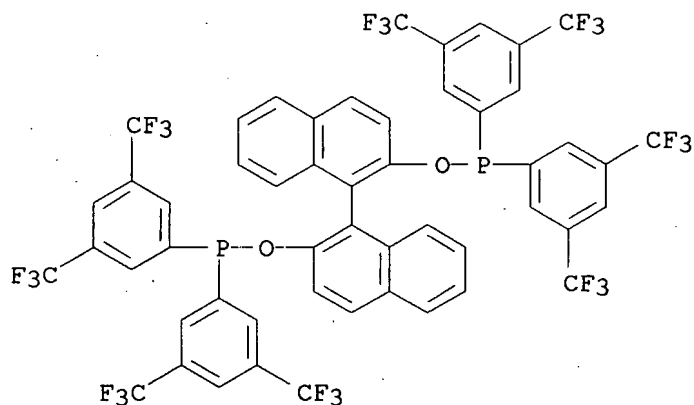
L3 ANSWER 105 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-75-7 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis[3-(trifluoromethyl)phenyl]-, [1,1'-binaphthalene]-  
2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C48 H28 F12 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

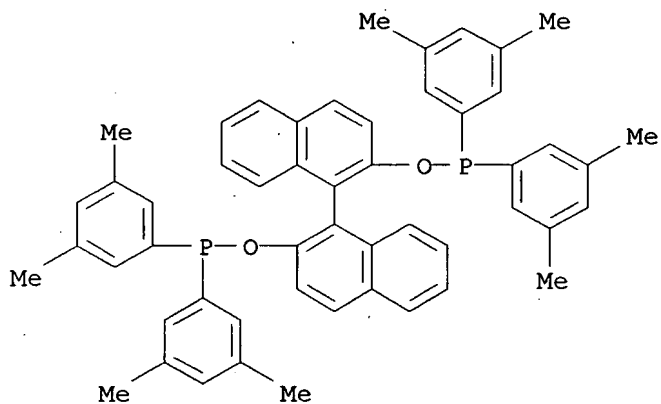
L3 ANSWER 106 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-74-6 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis[3,5-bis(trifluoromethyl)phenyl]-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C52 H24 F24 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 107 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-73-5 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(3,5-dimethylphenyl)-, [1,1'-binaphthalene]-2,2'-diyl  
ester (9CI) (CA INDEX NAME)  
MF C52 H48 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

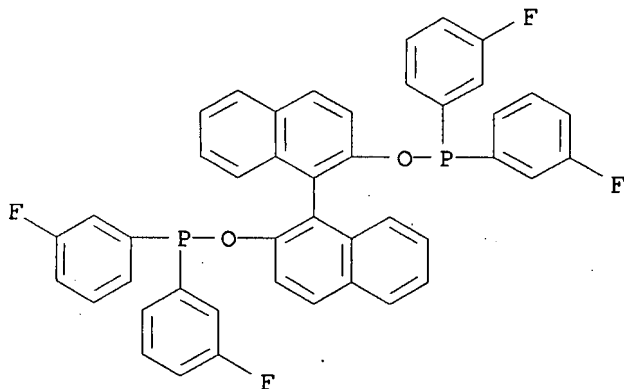


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 108 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-72-4 REGISTRY  
ED Entered STN: 08 Aug 1996

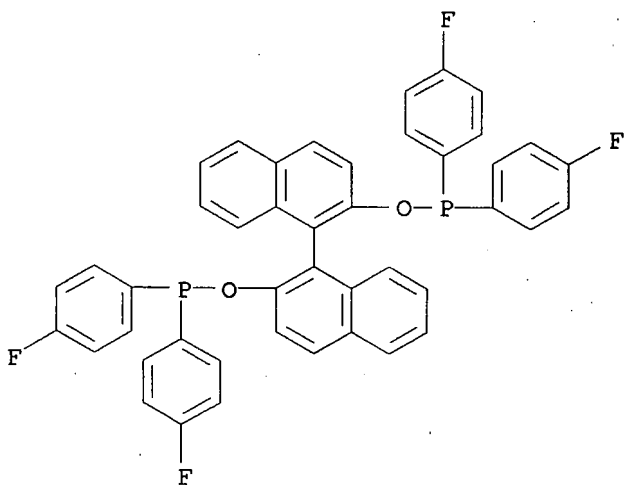
CN Phosphinous acid, bis(3-fluorophenyl)-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C44 H28 F4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

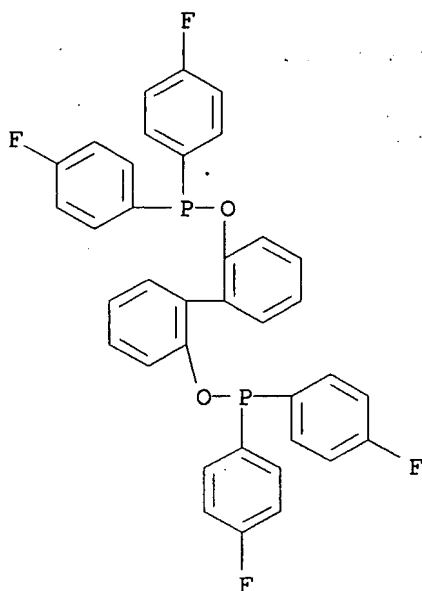
L3 ANSWER 109 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-71-3 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(4-fluorophenyl)-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C44 H28 F4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 110 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-70-2 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(4-fluorophenyl)-, [1,1'-biphenyl]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)  
MF C36 H24 F4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



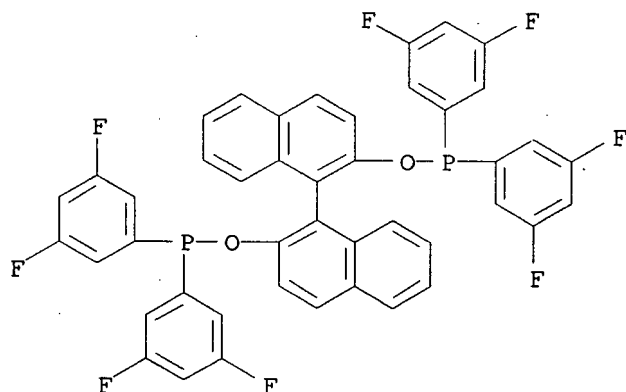
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d 13 111-128 ide

L3 ANSWER 111 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-69-9 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(3,5-difluorophenyl)-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C44 H24 F8 O2 P2  
SR CA

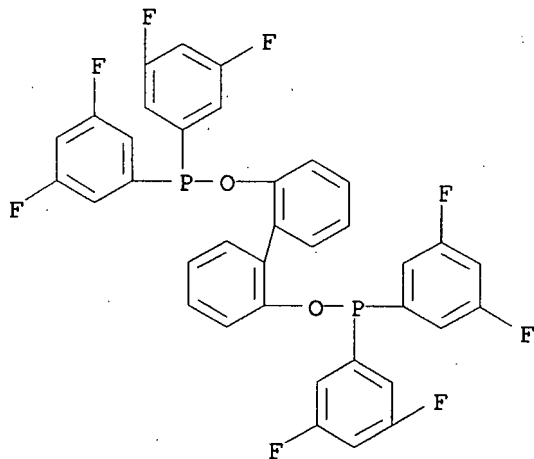
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 112 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-68-8 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(3,5-difluorophenyl)-, [1,1'-biphenyl]-2,2'-diyl  
ester (9CI) (CA INDEX NAME)  
MF C36 H20 F8 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

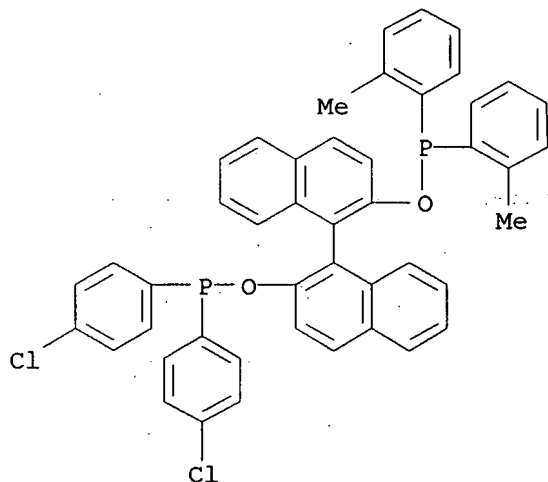


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

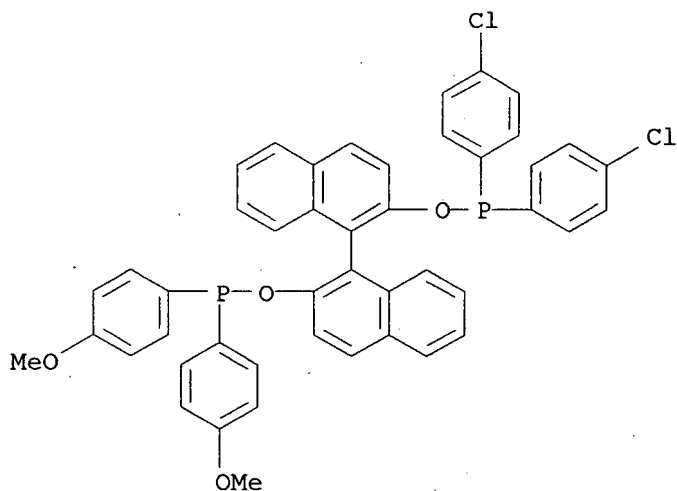
L3 ANSWER 113 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 179259-65-5 REGISTRY  
 ED Entered STN: 08 Aug 1996  
 CN Phosphinous acid, bis(4-chlorophenyl)-, 2'-[[bis(2-methylphenyl)phosphino]oxy][1,1'-binaphthalen]-2-yl ester (9CI) (CA INDEX NAME)  
 MF C46 H34 Cl2 O2 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

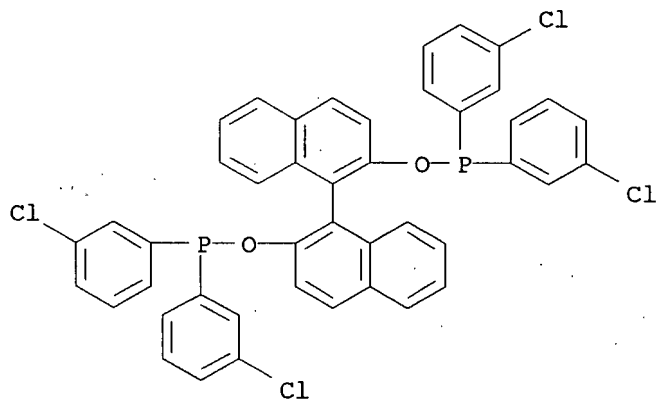
L3 ANSWER 114 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 179259-64-4 REGISTRY  
 ED Entered STN: 08 Aug 1996  
 CN Phosphinous acid, bis(4-chlorophenyl)-, 2'-[[bis(4-methoxyphenyl)phosphino]oxy][1,1'-binaphthalen]-2-yl ester (9CI) (CA INDEX NAME)  
 MF C46 H34 Cl2 O4 P2  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

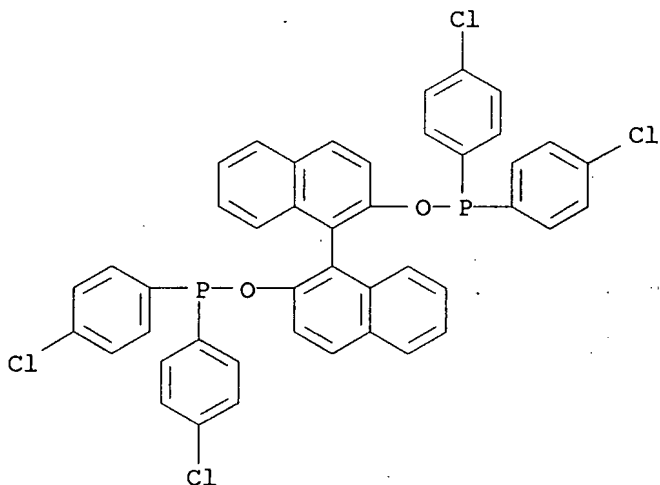
L3 ANSWER 115 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-63-3 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(3-chlorophenyl)-, [1,1'-binaphthalene]-2,2'-diyl  
ester (9CI) (CA INDEX NAME)  
MF C44 H28 Cl4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

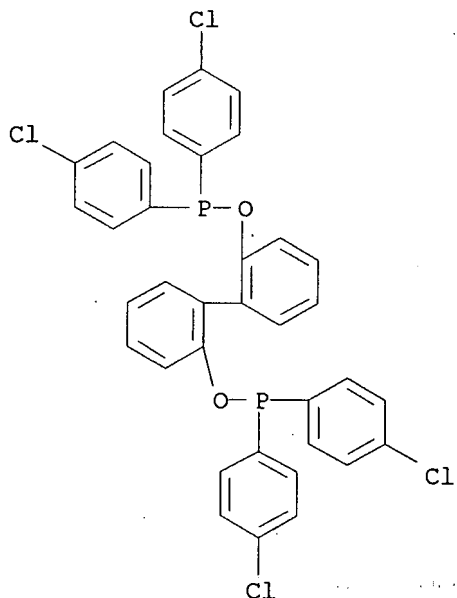
L3 ANSWER 116 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-62-2 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(4-chlorophenyl)-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C44 H28 Cl4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

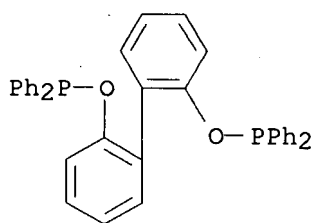
L3 ANSWER 117 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-61-1 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, bis(4-chlorophenyl)-, [1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)  
MF C36 H24 Cl4 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 118 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 179259-60-0 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, diphenyl-, [1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA  
INDEX NAME)  
MF C36 H28 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL

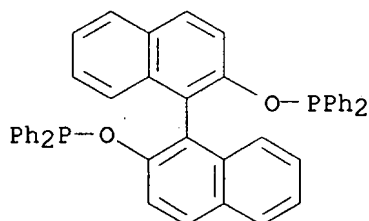


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 119 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

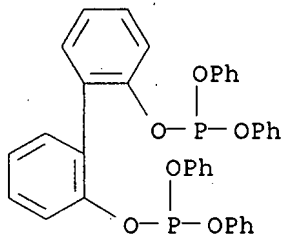
RN 179259-59-7 REGISTRY  
ED Entered STN: 08 Aug 1996  
CN Phosphinous acid, diphenyl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI)  
(CA INDEX NAME)  
MF C44 H32 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 120 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 154813-95-3 REGISTRY  
ED Entered STN: 05 May 1994  
CN Phosphorous acid, [1,1'-biphenyl]-2,2'-diyl tetraphenyl ester (9CI) (CA  
INDEX NAME)  
MF C36 H28 O6 P2  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

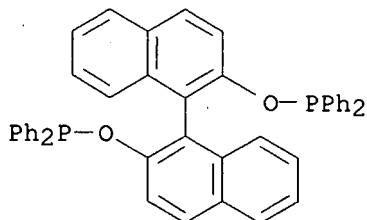


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 121 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 146744-05-0 REGISTRY  
ED Entered STN: 01 Apr 1993  
CN Phosphinous acid, diphenyl-, (1R)-[1,1'-binaphthalene]-2,2'-diyl ester  
(9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:

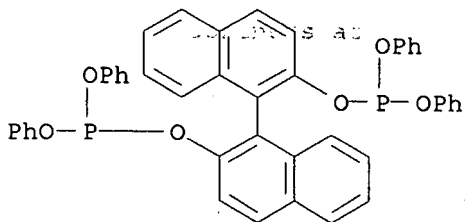
CN Phosphinous acid, diphenyl-, [1,1'-binaphthalene]-2,2'-diyl ester, (R)-  
OTHER NAMES:  
CN (R)-2,2'-Bis(diphenylphosphinoxy)-1,1'-binaphthyl  
CN (R)-[1,1'-Binaphthalene]-2,2'-diyl bis(diphenylphosphinite)  
DR 249626-62-8  
MF C44 H32 O2 P2  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

6 REFERENCES IN FILE CA (1907 TO DATE)  
6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 122 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 143059-92-1 REGISTRY  
ED Entered STN: 21 Aug 1992  
CN Phosphorous acid, [1,1'-binaphthalene]-2,2'-diyl tetraphenyl ester (9CI)  
(CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphorous acid, [1,1'-binaphthalene]-2,2'-diyl tetraphenyl ester,  
(±)-  
MF C44 H32 O6 P2  
SR CA  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)

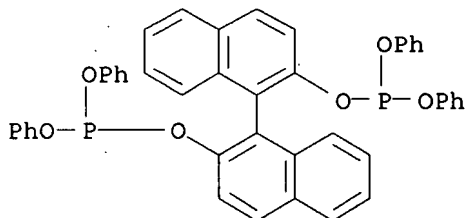


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 123 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN

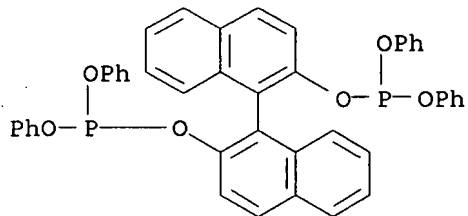
RN 142940-72-5 REGISTRY  
 ED Entered STN: 14 Aug 1992  
 CN Phosphorous acid, [1,1'-binaphthalene]-2,2'-diyl tetraphenyl ester, (S)-  
 (9CI) (CA INDEX NAME)  
 MF C44 H32 O6 P2  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 124 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 142940-68-9 REGISTRY  
 ED Entered STN: 14 Aug 1992  
 CN Phosphorous acid, [1,1'-binaphthalene]-2,2'-diyl tetraphenyl ester, (R)-  
 (9CI) (CA INDEX NAME)  
 MF C44 H32 O6 P2  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS  
 (\*File contains numerically searchable property data)

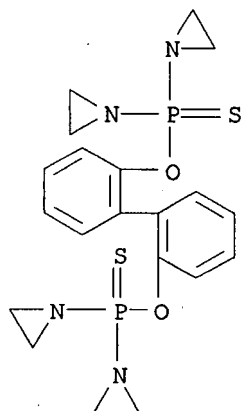


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 125 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 112658-04-5 REGISTRY  
 ED Entered STN: 06 Feb 1988  
 CN Phosphinothioic acid, bis(1-aziridiny)-, O,O-2,2'-biphenylene ester

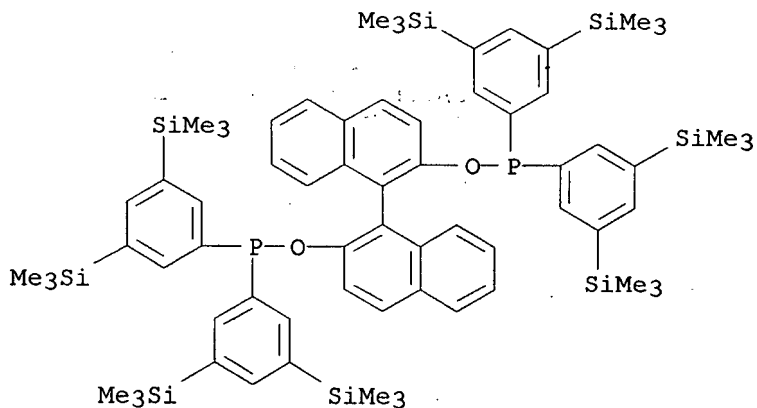
(6CI) (CA INDEX NAME)  
 MF C20 H24 N4 O2 P2 S2  
 SR CAOLD  
 LC STN Files: CA, CAOLD, CAPLUS, TOXCENTER



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

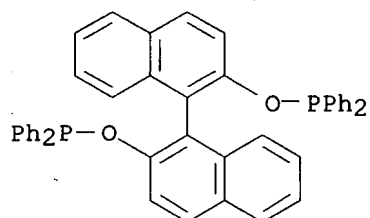
L3 ANSWER 126 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 96482-62-1 REGISTRY  
 ED Entered STN: 25 May 1985  
 CN Phosphinous acid, bis[3,5-bis(trimethylsilyl)phenyl]-,  
 [1,1'-binaphthalene]-2,2'-diyl ester, (S)- (9CI) (CA INDEX NAME)  
 MF C68 H96 O2 P2 Si8  
 LC STN Files: CA, CAPLUS, CASREACT



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

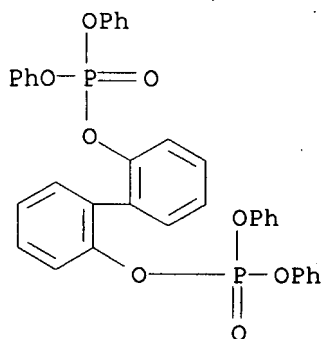
L3 ANSWER 127 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 64736-26-1 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN Phosphinous acid, P,P-diphenyl-, P,P'-[(1S)-[1,1'-binaphthalene]-2,2'-diyl] ester (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphinous acid, diphenyl-, (1S)-[1,1'-binaphthalene]-2,2'-diyl ester (9CI)  
CN Phosphinous acid, diphenyl-, [1,1'-binaphthalene]-2,2'-diyl ester, (S)-  
OTHER NAMES:  
CN (S)-BINAPO  
CN (S)-[1,1'-Binaphthalene]-2,2'-diyl bis(diphenylphosphinite)  
MF C44 H32 O2 P2  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

23 REFERENCES IN FILE CA (1907 TO DATE)  
23 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 128 OF 128 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 17270-05-2 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN Phosphoric acid, 2,2'-biphenylene tetraphenyl ester (8CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 2,2'-Biphenyldiol, bis(diphenyl phosphate)  
MF C36 H28 O8 P2  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d his

(FILE 'HOME' ENTERED AT 15:45:59 ON 02 AUG 2007)

FILE 'REGISTRY' ENTERED AT 15:46:41 ON 02 AUG 2007

L1 STRUCTURE UPLOADED  
L2 4 S L1  
L3 128 S L1 SSS FULL

=> fil stng

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
423.05	423.26

FULL ESTIMATED COST

FILE 'STNGUIDE' ENTERED AT 15:49:01 ON 02 AUG 2007  
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LAST RELOADED: Jul 30, 2007 (20070730/UP).

=> file reg

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.30	423.56

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 15:51:58 ON 02 AUG 2007  
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 1 AUG 2007 HIGHEST RN 943895-11-2  
DICTIONARY FILE UPDATES: 1 AUG 2007 HIGHEST RN 943895-11-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=>

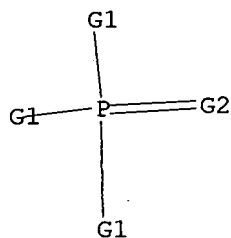
Uploading C:\Program Files\Stnexp\Queries\2007 cases\10576219\formula 2.str

L4 STRUCTURE UPLOADED

=> d l4

L4 HAS NO ANSWERS

L4 STR



G1 Cb,Cy,Hy,Ak

G2 O,S

Structure attributes must be viewed using STN Express query preparation.

=> s l4

SAMPLE SEARCH INITIATED 15:52:28 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 60924 TO ITERATE

3.3% PROCESSED 2000 ITERATIONS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01

50 ANSWERS

FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 1203769 TO 1233191  
PROJECTED ANSWERS: 40467 TO 46045

L5 50 SEA SSS SAM L4

=> s l4 sss full

FULL SEARCH INITIATED 15:52:33 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 1214530 TO ITERATE

82.3% PROCESSED 1000000 ITERATIONS ( 2 INCOMPLETE) 32116 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.18

FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 1214530 TO 1214530  
PROJECTED ANSWERS: 38413 TO 39597

L6 32116 SEA SSS FUL L4 ←

=> d his

(FILE 'HOME' ENTERED AT 15:45:59 ON 02 AUG 2007)

FILE 'REGISTRY' ENTERED AT 15:46:41 ON 02 AUG 2007

L1 STRUCTURE UPLOADED

L2 4 S L1

L3 128 S L1 SSS FULL

FILE 'STNGUIDE' ENTERED AT 15:49:01 ON 02 AUG 2007

FILE 'REGISTRY' ENTERED AT 15:51:58 ON 02 AUG 2007

L4 STRUCTURE UPLOADED

L5 50 S L4

L6 32116 S L4 SSS FULL

=> s l6 and l3

L7 0 L6 AND L3

=> s l3 subset=l6

ENTER SUBSET SEARCH SCOPE - SAMPLE, FULL, RANGE, OR (END):sample

SAMPLE SUBSET SEARCH INITIATED 15:54:01 FILE 'REGISTRY'

SAMPLE SUBSET SCREEN SEARCH COMPLETED - 17 TO ITERATE

100.0% PROCESSED 17 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

PROJECTIONS (WITHIN SPECIFIED SUBSET):

ONLINE \*\*COMPLETE\*\*

PROJECTED ITERATIONS (WITHIN SPECIFIED SUBSET):

93 TO 587

PROJECTED ANSWERS (WITHIN SPECIFIED SUBSET):

0 TO 0

L8 0 SEA SUB=L6 SSS SAM L1

=> s l3 subset=l6

ENTER SUBSET SEARCH SCOPE - SAMPLE, FULL, RANGE, OR (END):full

FULL SUBSET SEARCH INITIATED 15:54:10 FILE 'REGISTRY'

FULL SUBSET SCREEN SEARCH COMPLETED - 263 TO ITERATE

100.0% PROCESSED 263 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

L9 0 SEA SUB=L6 SSS FUL L1

=> d his

*Search his*

(FILE 'HOME' ENTERED AT 15:45:59 ON 02 AUG 2007)

FILE 'REGISTRY' ENTERED AT 15:46:41 ON 02 AUG 2007

L1 STRUCTURE UPLOADED  
L2 4 S L1  
L3 128 S L1 SSS FULL

FILE 'STNGUIDE' ENTERED AT 15:49:01 ON 02 AUG 2007

FILE 'REGISTRY' ENTERED AT 15:51:58 ON 02 AUG 2007  
L4 STRUCTURE UPLOADED  
L5 50 S L4  
L6 32116 S L4 SSS FULL  
L7 0 S L6 AND L3  
L8 0 S L3 SUB=L6 SAMPLE  
L9 0 S L3 SUB=L6 FULL

=> file hcaplus

COST IN U.S. DOLLARS

SINCE FILE  
ENTRY

TOTAL  
SESSION

FULL ESTIMATED COST

214.10

637.66

FILE 'HCAPLUS' ENTERED AT 15:54:29 ON 02 AUG 2007

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FILE COVERS 1907 - 2 Aug 2007 VOL 147 ISS 6

FILE LAST UPDATED: 1 Aug 2007 (20070801/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13

L10 73 L3

=> s 16

L11 12401 L6

=> s 110 and 111

L12 8 L10 AND L11

=> d 112 1-8 ibib abs

L12 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:725301 HCAPLUS

DOCUMENT NUMBER: 145:335388

TITLE: 3,3'-Diphosphoryl-1,1'-bi-2-naphthol-Zn(II) Complexes  
as Conjugate Acid-Base Catalysts for Enantioselective  
Dialkylzinc Addition to Aldehydes

AUTHOR(S): Hatano, Manabu; Miyamoto, Takashi; Ishihara, Kazuaki

CORPORATE SOURCE: Graduate School of Engineering, Nagoya University,  
Nagoya, 464-8603, JapanSOURCE: Journal of Organic Chemistry (2006), 71(17), 6474-6484  
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 145:335388

AB A highly enantioselective dialkylzinc (R<sub>2</sub>Zn) addition to a series of aromatic, aliphatic, and heteroarom. aldehydes was developed based on conjugate Lewis acid-Lewis base catalysis. Bifunctional BINOL ligands bearing phosphine oxides [P(:O)R<sub>2</sub>], phosphonates [P(:O)(OR)<sub>2</sub>], or phosphoramides [P(:O)(NR<sub>2</sub>)<sub>2</sub>] at the 3,3'-positions were prepared by using a phospho-Fries rearrangement as a key step. The coordination of a NaphO-Zn(II)-R<sub>2</sub> center as a Lewis acid to a carbonyl group in a substrate and the activation of R<sub>2</sub>Zn(II) with a phosphoryl group (P=O) as a Lewis base in the 3,3'-diphosphoryl-BINOL-Zn(II) catalyst could promote carbon-carbon bond formation with high enantioselectivities (up to >99% ee). Mechanistic studies were performed by X-ray analyses of a free ligand and a tetranuclear Zn(II) cluster, a <sup>31</sup>P NMR experiment on Zn(II) complexes, an absence of nonlinear effect between the ligand and Et-adduct of benzaldehyde, and stoichiometric reactions with some chiral or achiral Zn(II) complexes to propose a transition-state assembly including monomeric active intermediates.

REFERENCE COUNT: 118 THERE ARE 118 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L12 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:123272 HCAPLUS

DOCUMENT NUMBER: 144:191654

TITLE: Bisnaphthol derivative and asymmetric catalyst and  
production method of optically active alcohol

INVENTOR(S): Ishihara, Kazuaki; Hatano, Manabu

PATENT ASSIGNEE(S): Japan Science and Technology Agency, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006035125	A	20060209	JP 2004-220084	20040728
PRIORITY APPLN. INFO.:			JP 2004-220084	20040728
OTHER SOURCE(S):			CASREACT 144:191654	

AB The invention refers to a production method of an optically active alc. using  
an asym. catalyst wherein the catalyst is a 3,3'-diphenylphosphine oxide

disubstituted bisnaphthol.

L12 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1224236 HCAPLUS

DOCUMENT NUMBER: 145:396758

TITLE: Enantioselective addition of organozinc reagents to aldehydes catalyzed by 3,3'-bis(diphenylphosphinoyl)-BINOL

AUTHOR(S): Hatano, Manabu; Miyamoto, Takashi; Ishihara, Kazuaki

CORPORATE SOURCE: Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa, Nagoya, 464-8603, Japan

SOURCE: Advanced Synthesis &amp; Catalysis (2005), 347(11-13), 1561-1568

CODEN: ASCAF7; ISSN: 1615-4150

PUBLISHER: Wiley-VCH Verlag GmbH &amp; Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 145:396758

AB The enantioselective addition of organozinc reagents to aromatic and aliphatic aldehydes gives secondary alcs. with excellent enantioselectivities in high yields through the catalytic use of (R)-3,3'-bis(diphenylphosphinoyl)-BINOL or (R)-3,3'-bis(diphenylthiophosphinoyl)-BINOL without Ti(IV) complexes. The coordination of the O or S atom of a (thio)phosphinoyl group bearing a BINOL backbone to organozinc reagents can efficiently increase the nucleophilicity of the organozinc reagents. The crystal structures of (R)-3,3'-bis(diphenylphosphinoyl)-BINOL and its zinc complex were determined

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:391724 HCAPLUS

DOCUMENT NUMBER: 136:401880

TITLE: Ortho substituted chiral phosphines and phosphinites and their use in asymmetric catalytic reactions

INVENTOR(S): Zhang, Xumu

PATENT ASSIGNEE(S): The Penn State Research Foundation, USA

SOURCE: PCT Int. Appl., 122 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

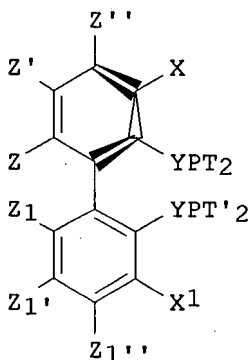
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002040491	A1	20020523	WO 2001-US43779	20011116
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2427579	A1	20020523	CA 2001-2427579	20011116

AU 2002016719	A5	20020527	AU 2002-16719	20011116
US 2002128501	A1	20020912	US 2001-991261	20011116
US 6653485	B2	20031125		
EP 1341797	A1	20030910	EP 2001-996543	20011116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004513950	T	20040513	JP 2002-543499	20011116
CN 1610688	A	20050427	CN 2001-819067	20011116
US 2004068126	A1	20040408	US 2003-660350	20030911
US 6855657	B2	20050215		
PRIORITY APPLN. INFO.:			US 2000-249537P	P 20001117
			US 2001-301221P	P 20010627
			US 2001-991261	A3 20011116
			WO 2001-US43779	W 20011116
OTHER SOURCE(S):			CASREACT 136:401880; MARPAT 136:401880	
GI				



I

} Formula 1

AB 3,3'-Substituted chiral biaryl phosphine and phosphinite ligands, I (X, X' = independently (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino; Z, Z' = independently (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino, bridging group, etc.; Z', Z'', Z1', Z1'' = independently H, (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino, bridging group, etc.; Y, Y' = O, CH2, NH, S, a bond between carbon and phosphorus, etc.; T, T' = (un)substituted alkyl, (un)substituted aryl, alkoxy, etc.) and metal complexes based on such chiral ligands useful in asym. catalysis are disclosed. The metal complexes are useful as catalysts in asym. reactions, such as, hydrogenation, hydride transfer, allylic alkylation, hydrosilylation, hydroboration, hydrovinylation, hydroformylation, hydroformylation, olefin metathesis, hydrocarboxylation, isomerization, cyclopropanation, Diels-Alder reaction, Heck reaction, isomerization, Aldol reaction, Michael addition, epoxidn., Kinetic resolution and [m + n]

cycloaddn. The metal complexes are particularly effective in Ru-catalyzed asym. hydrogenation of beta-ketoesters to beta-hydroxyesters and Ru-catalyzed asym. hydrogenation of enamides to beta amino acids. Thus, (R)-3,3'-diphenyl-2,2'-bis(diphenylphosphinoxy)-1,1'-binaphthyl was prepared in five steps starting from (R)-BINOL.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:818411 HCAPLUS

DOCUMENT NUMBER: 136:310129

TITLE: A comparison of the asymmetric hydrogenation catalyzed by rhodium complexes containing chiral ligands with a binaphthyl unit and those with a 5,5',6,6',7,7',8,8'-octahydro-binaphthyl unit

AUTHOR(S): Zhang, Fu-Yao; Kwok, Wai Him; Chan, Albert S. C.

CORPORATE SOURCE: Open Laboratory of Chirotechnology and Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hong Kong, Peop. Rep. China

SOURCE: Tetrahedron: Asymmetry (2001), 12(16), 2337-2342

CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 136:310129

AB The chiral ligands H8-BINAPO and H8-BDPAB were synthesized by reacting chlorodiphenylphosphine with H8-BINOL and H8-BINAM, resp. Applications of these ligands in the Rh-catalyzed enantioselective hydrogenation of a variety of (Z)-acetamido-3-arylacrylic acid Me esters provided chiral amino acid derivs. with good to excellent enantioselectivities (H8-BINAPO: up to 84.0% e.e.; H8-BDPAB: up to 97.1% e.e.). In the hydrogenation of acetamidoacrylic acid, 99% e.e. was obtained when a [Rh(H8-BDPAB)]<sup>+</sup> catalyst was used. The catalytic activities and enantioselectivities of [Rh(H8-BINAPO)]<sup>+</sup> and [Rh(H8-BDPAB)]<sup>+</sup> are substantially better than those obtained with the corresponding rhodium catalysts containing BINAPO (up to 64% e.e.) and BDPAB (up to 92.6% e.e.).

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:47309 HCAPLUS

DOCUMENT NUMBER: 134:252409

TITLE: Completely stereoselective P-C bond formation via base-induced [1,3]- and [1,2]-intramolecular rearrangements of aryl phosphinates, phosphinoamidates and related compounds: generation of P-chiral  $\beta$ -hydroxy,  $\beta$ -mercapto- and  $\alpha$ -amino tertiary phosphine oxides and phosphine sulfides

AUTHOR(S): Au-Yeung, T.-L.; Chan, K.-Y.; Haynes, R. K.; Williams, I. D.; Yeung, L. L.

CORPORATE SOURCE: Department of Chemistry, The Hong Kong University of Science and Technology, Kowloon, Hong Kong

SOURCE: Tetrahedron Letters (2001), 42(3), 457-460

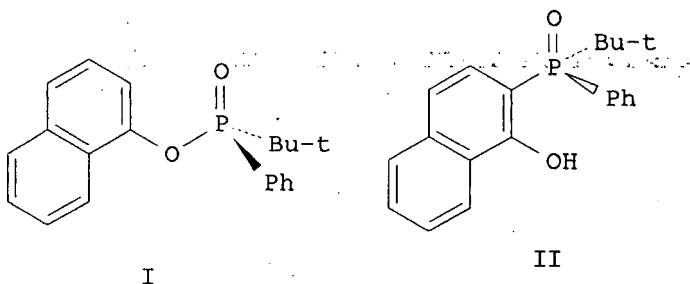
CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 134:252409  
GI



AB Upon treatment with LDA or alkyllithium, enantiomers of P-chiral phosphinates, e.g. I, phosphinothioates, phosphinoamides, thionophosphinates, thionophosphinothioates and thionophosphinoamides, undergo clean [1,3]- and [1,2]-rearrangements with complete stereoselectivity, with retention of configuration at phosphorus, to provide functionalized tertiary phosphine oxides, e.g. II, and phosphine sulfides; the [1,2]-rearrangements of the phosphinoamides are previously unrecorded. BINOL bisphosphinates and other phosphinothioates and amides rearrange in the presence of strong bases.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:47308 HCAPLUS

DOCUMENT NUMBER: 134:252408

TITLE: Reactions of (RP)- and (SP)-tert-butylphenylphosphinobromidates and tert-butylphenylthionophosphinochloridates with heteroatom nucleophiles; preparation of P-chiral binol phosphinates and related compounds

AUTHOR(S): Au-Yeung, T.-L.; Chan, K.-Y.; Chan, W.-K.; Haynes, R. K.; Williams, I. D.; Yeung, L. L.

CORPORATE SOURCE: Department of Chemistry, The Hong Kong University of Science and Technology, Kowloon, Hong Kong

SOURCE: Tetrahedron Letters (2001), 42(3), 453-456

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 134:252408

AB Reaction of (RP)- and (SP)-tert-butylphenylphosphinobromidates and tert-butylphenylthionophosphinochloridates with metalated phenol and BINOL alkoxides, thioalkoxides, amides and enolates leading with clean inversion at phosphorus to phosphinates, phosphinothiolates and phosphinoamides, and the corresponding thionophosphorus compds. are described. Binol and other aryloxides, thioalkoxides and amides react with P-chiral halidates to form the title compds.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:218034 HCAPLUS

DOCUMENT NUMBER: 133:9570

TITLE: Synthesis of a rigid and optically active poly(BINAP) and its application in asymmetric catalysis

AUTHOR(S): Yu, Hong-Bin; Hu, Qiao-Sheng; Pu, Lin

CORPORATE SOURCE: Department of Chemistry, University of Virginia, Charlottesville, VA, 22901, USA

SOURCE: Tetrahedron Letters (2000), 41(11), 1681-1685

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Rigid and sterically regular chiral poly[2,2'-bis(diphenylphosphino)-1,1'-binaphthyl] [poly(BINAP)] is synthesized. The application of this polymer ligand in asym. hydrogenations is examined. High enantioselectivity for the asym. hydrogenation of ketones is achieved. The catalytic properties of the poly(BINAP)-based catalysts are very similar to those of the BINAP catalysts. This study further demonstrates that rigid and sterically regular polymer structures are able to preserve the catalytic properties of monomer catalysts.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=&gt; fil stng

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

27.84

665.50

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-6.24

-6.24

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=&gt; file hcaplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.60

666.10

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

0.00

-6.24

FILE 'HCAPLUS' ENTERED AT 16:01:41 ON 02 AUG 2007

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FILE COVERS 1907 - 2 Aug 2007 VOL 147 ISS 6  
FILE LAST UPDATED: 1 Aug 2007 (20070801/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l3 and catalyst

73 L3  
770520 CATALYST  
767946 CATALYSTS  
984676 CATALYST  
(CATALYST OR CATALYSTS)  
L13 60 L3 AND CATALYST

=> s l13 and "Transition metal"

996750 "TRANSITION"  
265219 "TRANSITIONS"  
1110456 "TRANSITION"  
("TRANSITION" OR "TRANSITIONS")  
1760872 "METAL"  
878731 "METALS"  
2129106 "METAL"  
("METAL" OR "METALS")  
187588 "TRANSITION METAL"  
("TRANSITION" (W) "METAL")  
L14 9 L13 AND "TRANSITION METAL"

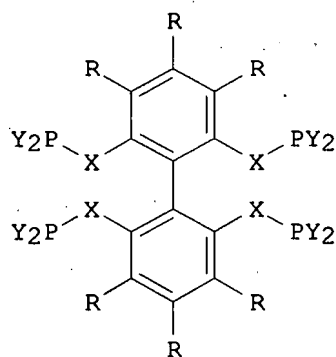
=> d l14 ibib abs 1-9

L14 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2007:761546 HCAPLUS  
TITLE: Chelating tetraphosphorus ligands with 1,1'-biphenyl  
backbone for transition metal  
-catalyzed hydroformylation of alkenes and related  
reactions  
INVENTOR(S): Zhang, Xumu; Yan, Yongjun  
PATENT ASSIGNEE(S): The Penn State Research Foundation, USA  
SOURCE: PCT Int. Appl., 33pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007078859	A2	20070712	WO 2006-US47766	20061215
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.:  
GI

US 2005-750733P P 20051215



AB Tetraphosphines, tetraphosphonites, tetraphosphinites, tetraphosphorodiamidites and combinations thereof I [R = H, alkyl, aryl, alkoxy, aryloxy, CO<sub>2</sub>Et, halo, sulfonyl, phosphinyl, amino; Y = alkyl, aryl, alkoxy, aryloxy, (un)substituted 1-pyrrolyl; X = O, NH, alkylimino, CH<sub>2</sub>], useful as ligands for transition metal-catalyzed hydroformylation of alkenes, are claimed. Ligands I demonstrate enhanced complexation ability at high pressures of CO, thus providing high regioselectivity and n/iso ratio of the product aldehydes in the processes, catalyzed by transition metal compds., preferably rhodium(I) complexes, at lower ligand/metal ratios, compared to monodentate and bidentate ligands. The ligands I may be also useful in hydrocarboxylation, hydrocyanation, isomerization-formylation, hydroaminomethylation and similar related reactions. In an example, ligand I (L1, X = O, R = H, Y = 1-pyrrolyl) was prepared by reaction of 4.4 mmol of chlorodi-1-pyrrolylphosphine with 1 mmol of 1,1'-biphenyl-2,2',6,6'-tetrol in the presence of 1 mL of Et<sub>3</sub>N in 10 mL of THF for 6 h at 20°. In subsequent examples, effects of hydroformylation reaction conditions and substrate structure were explored; hydroformylation of 10 mmol of 1-octene catalyzed by 3:1 mol. ratio of L1:[Rh(acac)(CO)<sub>2</sub>] (1:104 catalyst/substrate ratio) at 100° and 10 atm of CO/H<sub>2</sub> (1:1) for 12 h yielded 1-nonanal with 372:1 n/iso regioselectivity.

L14 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1329709 HCAPLUS

DOCUMENT NUMBER: 144:71485

TITLE: Phosphorus-containing catalyst compositions  
and hydroformylation process therewithINVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun; Kwon, O-Hak; Eom,  
Sung-Shik; Lee, Sang-Gi; Moon, Ji-Joong; Park,  
Kwang-Ho

PATENT ASSIGNEE(S): LG Chem. Ltd.; S. Korea

SOURCE: PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005120705	A1	20051222	WO 2004-KR1646	20040703
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2005118023	A	20051215	KR 2004-43334	20040612
CN 1863595	A	20061115	CN 2004-80029312	20040703
EP 1755782	A1	20070228	EP 2004-774072	20040703
R: DE, FR, GB, SE				
JP 2007507340	T	20070329	JP 2006-532068	20040703
US 2007123735	A1	20070531	US 2006-575147	20060407
PRIORITY APPLN. INFO.:			KR 2004-43334	A 20040612
			WO 2004-KR1646	W 20040703

OTHER SOURCE(S): MARPAT 144:71485

AB Provided are a catalyst composition comprising a bidentate ligand, a monodentate ligand, and a transition metal catalyst and a process of hydroformylation of olefin compds., comprising reacting the olefin compound with a gas mixture of hydrogen and carbon monoxide while being stirred at elevated pressures and temps. in the presence of the catalyst composition to produce an aldehyde. The present catalytic composition demonstrates the high catalytic activity and option control of selectivity to normal aldehyde or iso aldehyde (N/I selectivity) to a desired value.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:99448 HCAPLUS

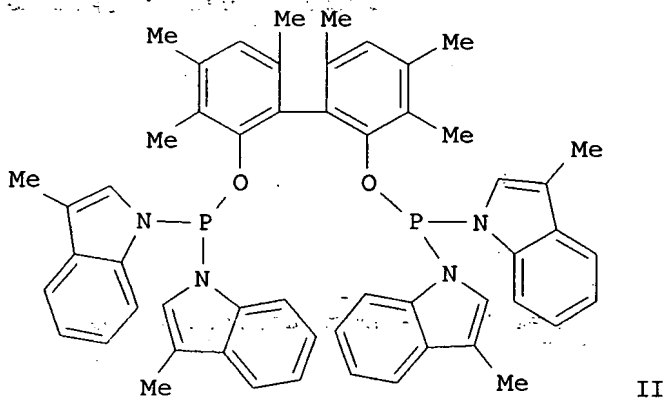
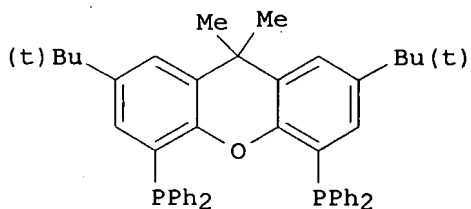
DOCUMENT NUMBER: 142:179273

TITLE: Two-stage hydroformylation of butenes

INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco; Zeller, Edgar;  
Volland, Martin; Flores, Miguel Angel

PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
 SOURCE: PCT Int. Appl., 65 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005009934	A2	20050203	WO 2004-EP8209	20040722
WO 2005009934	A3	20050407		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10333519	A1	20050217	DE 2003-10333519	20030723
PRIORITY APPLN. INFO.:			DE 2003-10333519	A 20030723
OTHER SOURCE(S):	MARPAT 142:179273			
GI				



AB Olefins, especially C4 hydrocarbon mixts. containing 1- and 2-butene, are hydroformylated in a 2-stage procedure in which (a) an olefin-containing feed, CO and H are fed into a 1st reaction zone and reacted in the presence of a 1st catalyst system for hydroformylation of 1-butene with higher n-selectivity, (b) a liquid stream comprising unreacted olefins and optionally saturated hydrocarbons is separated from the discharge from the 1st reaction zone, (c) the liquid stream obtained in step (b), CO and H are fed into a 2nd reaction zone and reacted in the presence of a 2nd catalyst system suitable for isomerization hydroformylation of 2-butene with high n-selectivity. The catalysts used for the 1st and 2nd hydroformylation stage are known transition metal compds. and complexes (structures specified). For example, hydroformylation of C4 fraction (raffinate II) with synthesis gas for 4 h at 20 bar and 90° in the presence of Rh(CO)2acac catalyst with ligand I in the 1st stage gave 1-butene conversion 65% and valeraldehyde yield 15% with 98.4% linearity. Hydroformylation of the latter product for 4 h at 17 bar and 90° with 1:2 CO/H mixture in the presence of Rh(CO)2acac catalyst with ligand II in the 2nd stage gave 1-butene conversion 84%, 2-butene conversion 38% and valeraldehyde yield 28% with 96.2% linearity.

L14 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:570037 HCAPLUS

DOCUMENT NUMBER: 141:123759

TITLE: Catalytic asymmetric reductive amination of ketones via transition metal complex catalysts with chiral phosphine ligands

INVENTOR(S): Zhang, Xumu

PATENT ASSIGNEE(S): Penn State Research Foundation, USA

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004058982	A2	20040715	WO 2003-US34955	20031105
WO 2004058982	A3	20041229		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003294243	A1	20040722	AU 2003-294243	20031105
US 2004147762	A1	20040729	US 2003-701081	20031105
PRIORITY APPLN. INFO.:				
			US 2002-424663P	P 20021106
			WO 2003-US34955	W 20031105

OTHER SOURCE(S): CASREACT 141:123759

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Processes for the preparation of compds., e. g. I, having a chiral carbon substituted with an amine are disclosed. The processes include admixing a ketone, e. g. II, with an amine, e. g. III in the presence of a catalyst having a chiral phosphine ligand, e. g. IV, and an acid. The admixt. can also contain a reducing additive. The admixt. is then exposed to hydrogen to directly and asym. aminate the ketone.

L14 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:513398 HCAPLUS  
DOCUMENT NUMBER: 141:73317  
TITLE: Cyclohexane derivatives and methods for their preparation  
INVENTOR(S): Allgeier, Alan M.; Lenges, Christian P.; Shapiro, Rafael; Tam, Wilson  
PATENT ASSIGNEE(S): Invista North America S.A.R.L., USA  
SOURCE: U.S. Pat. Appl. Publ., 21 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004122252	A1	20040624	US 2002-322273	20021218
US 6906218	B2	20050614		
WO 2004058680	A1	20040715	WO 2003-US40247	20031216
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003293579	A1	20040722	AU 2003-293579	20031216
EP 1572621	A1	20050914	EP 2003-790528	20031216
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1729155	A	20060201	CN 2003-80106658	20031216
CN 1966487	A	20070523	CN 2006-10163682	20031216
PRIORITY APPLN. INFO.:			US 2002-322273	A 20021218
			CN 2003-80106658	A3 20031216
			WO 2003-US40247	W 20031216

AB Disclosed herein are methods for preparing nitrile derivs. and their corresponding amines from 1-,2-,4-trivinylcyclohexane by hydrocyanation, followed by hydrogenation. Also disclosed are novel compds. and catalysts comprising transition metal compds. and organic phosphorus ligands used in the methods described herein.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:307851 HCAPLUS

DOCUMENT NUMBER: 139:69492

TITLE: The First Highly Enantioselective Homogeneously Catalyzed Asymmetric Reductive Amination: Synthesis of  $\alpha$ -N-Benzylamino Acids

AUTHOR(S): Kadyrov, Renat; Riermeier, Thomas H.; Dingerdissen, Uwe; Tararov, Vitali; Boerner, Armin

CORPORATE SOURCE: Project House Catalysis, Degussa AG, Frankfurt/Main, D-65926, Germany

SOURCE: Journal of Organic Chemistry (2003), 68(10), 4067-4070  
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:69492

AB High-throughput screening of a library of 96 chiral phosphine ligands for two types of Rh(I) complexes was used to identify homogeneous catalysts for the highly enantioselective reductive amination of  $\alpha$ -keto acids HOCCOR (R = CH<sub>2</sub>Ph, Me, Ph, CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H, CH<sub>2</sub>CO<sub>2</sub>H, CH<sub>2</sub>CH<sub>2</sub>Ph, CH<sub>2</sub>CHMe<sub>2</sub>, CH<sub>2</sub>Me<sub>3</sub>) by benzylamine. After optimization of the reaction conditions and scale-up with a cationic Rh-Deguphos [Deguphos = (3R,4R)-1-benzyl-3,4-bis(diphenylphosphino)pyrrolidine] catalyst, a range of chiral N-benzyl  $\alpha$ -amino acids PhCH<sub>2</sub>NHCH(R)CO<sub>2</sub>H was produced in good yields with as high as 98% enantiomeric excess.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:298690 HCAPLUS

DOCUMENT NUMBER: 138:304408

TITLE: Use of chelating phosphonites with transition metals as catalysts

INVENTOR(S): Bartsch, Michael; Baumann, Robert; Kunsmann-keitel, Dagmar Pasca; Haderlein, Gerd; Jungkamp, Tim; Altmayer, Marco; Siegel, Wolfgang; Molnar, Ferenc

PATENT ASSIGNEE(S): BASF AG, Germany

SOURCE: Ger. Offen., 14 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10150286	A1	20030417	DE 2001-10150286	20011012
CA 2462720	A1	20030424	CA 2002-2462720	20021004
WO 2003033142	A1	20030424	WO 2002-EP11108	20021004

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,

UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 AU 2002362816 A1 20030428 AU 2002-362816 20021004  
 EP 1438133 A1 20040721 EP 2002-801309 20021004  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
 BR 2002013108 A 20040921 BR 2002-13108 20021004  
 CN 1568225 A 20050119 CN 2002-820102 20021004  
 JP 2005505611 T 20050224 JP 2003-535929 20021004  
 US 2005090677 A1 20050428 US 2004-491911 20040408  
 IN 2004CN01013 A 20060203 IN 2004-CN1013 20040511  
 PRIORITY APPLN. INFO.: DE 2001-10150286 A 20011012  
 WO 2002-EP11108 W 20021004  
 OTHER SOURCE(S): CASREACT 138:304408; MARPAT 138:304408  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Phosphonites I, II, and III (R1, R2, R4 = independently H, alkyl, C1-8 alkenyl, C1-8 alkoxy, R3 = H, Me, X = F, Cl, CF3, n = 0-2) are useful as ligands for nickel(0) catalyzed reactions. Thus, nickel(0)-(m-/p-tolylphosphite) catalyzed isomerization of 2-methyl-3-butenitrile at 115° in 180 min gave 3-pentenitrile which in presence of same catalyst, ZnCl2 additive and HCN gave hydrocyanation product, adipodinitrile.

L14 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:218034 HCAPLUS  
 DOCUMENT NUMBER: 133:9570  
 TITLE: Synthesis of a rigid and optically active poly(BINAP) and its application in asymmetric catalysis  
 AUTHOR(S): Yu, Hong-Bin; Hu, Qiao-Sheng; Pu, Lin  
 CORPORATE SOURCE: Department of Chemistry, University of Virginia, Charlottesville, VA, 22901, USA  
 SOURCE: Tetrahedron Letters (2000), 41(11), 1681-1685  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Rigid and sterically regular chiral poly[2,2'-bis(diphenylphosphino)-1,1'-binaphthyl] [poly(BINAP)] is synthesized. The application of this polymer ligand in asym. hydrogenations is examined. High enantioselectivity for the asym. hydrogenation of ketones is achieved. The catalytic properties of the poly(BINAP)-based catalysts are very similar to those of the BINAP catalysts. This study further demonstrates that rigid and sterically regular polymer structures are able to preserve the catalytic properties of monomer catalysts.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:633105 HCAPLUS  
 DOCUMENT NUMBER: 117:233105  
 TITLE: A modular approach for ligand design for asymmetric allylic alkylations via enantioselective palladium-catalyzed ionizations  
 AUTHOR(S): Trost, Barry M.; Van Vranken, David L.; Bingel, Carsten  
 CORPORATE SOURCE: Dep. Chem., Stanford Univ., Stanford, CA, 94305-5080, USA  
 SOURCE: Journal of the American Chemical Society (1992), 114(24), 9327-43  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 117:233105  
 AB A new class of ligands for asym. transition metal catalysis based on 2-(diphenylphosphino)benzoic acid was used in a mechanistically-defined palladium-catalyzed reaction in which enantiodifferentiation was the result of selective ionization of substrates derived from cis-2-cycloalkene-1,4-diols. By making rational, stepwise changes in the ligand structure, the structural requirements for good asym. induction were probed. The absolute stereochem. of the products was found to be related to the chirality of the ligand in a predictable fashion. A mnemonic is given which allows prediction of the mode of ionization (R or S) solely on the basis of the stereochem. of the variable chiral linker used to make the ligand.

=> s 16 and catalyst

12401 L6  
 770520 CATALYST  
 767946 CATALYSTS  
 984676 CATALYST  
 (CATALYST OR CATALYSTS)

L15 2579 L6 AND CATALYST

=> s 115 and "Transition metal"

996750 "TRANSITION"  
 265219 "TRANSITIONS"  
 1110456 "TRANSITION"  
 ("TRANSITION" OR "TRANSITIONS")  
 1760872 "METAL"  
 878731 "METALS"  
 2129106 "METAL"  
 ("METAL" OR "METALS")  
 187588 "TRANSITION METAL"  
 ("TRANSITION" (W) "METAL")

L16 184 L15 AND "TRANSITION METAL"

=> s 116 and ligand

325121 LIGAND  
 221085 LIGANDS  
 442337 LIGAND  
 (LIGAND OR LIGANDS)

L17 145 L16 AND LIGAND

=> s 117 and 13

73 L3

L18 1 L17 AND L3

=&gt; d ibib abs

L18 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:218034 HCAPLUS

DOCUMENT NUMBER: 133:9570

TITLE: Synthesis of a rigid and optically active poly(BINAP) and its application in asymmetric catalysis

AUTHOR(S): Yu, Hong-Bin; Hu, Qiao-Sheng; Pu, Lin

CORPORATE SOURCE: Department of Chemistry, University of Virginia, Charlottesville, VA, 22901, USA

SOURCE: Tetrahedron Letters (2000), 41(11), 1681-1685

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Rigid and sterically regular chiral poly[2,2'-bis(diphenylphosphino)-1,1'-binaphthyl] [poly(BINAP)] is synthesized. The application of this polymer ligand in asym. hydrogenations is examined. High enantioselectivity for the asym. hydrogenation of ketones is achieved. The catalytic properties of the poly(BINAP)-based catalysts are very similar to those of the BINAP catalysts. This study further demonstrates that rigid and sterically regular polymer structures are able to preserve the catalytic properties of monomer catalysts.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=&gt; e US2007-093680/apps

E1 1 US2007-886008P/PRN

E2 5 US2007-890380P/PRN

E3 0 --&gt; US2007-93680/AP

E4 0 US2007-93680/PRN

E5 1 US21-406846/AP

E6 1 US21-434414/AP

E7 1 US21-434428/AP

E8 1 US21-434495/AP

E9 1 US21-434522/AP

E10 1 US21-434525/AP

E11 1 US21-434580/AP

E12 1 US21-434607/AP

=&gt; e US2007-093680/ap,prn,pn

E1 1 US2007-886008P/PRN

E2 5 US2007-890380P/PRN

E3 0 --&gt; US2007-93680/AP

E4 0 US2007-93680/PRN

E5 0 US2007-93680/PN

E6 1 US2007000001/PN

E7 1 US2007000032/PN

E8 2 US2007000064/PN

E9 1 US2007000065/PN

E10 1 US2007000066/PN

E11 1 US2007000067/PN

E12 1 US2007000068/PN

=&gt; s jeon,y?/au and ko,d?/au

1193 JEON,Y?/AU

798 KO,D?/AU

L19 5 JEON,Y?/AU AND KO,D?/AU

=&gt; s 119 and kwon,o?/au

2629 KWON,O?/AU

L20 5 L19 AND KWON,O?/AU

=&gt; s 120 and eom,s?/au

288 EOM,S?/AU

L21 5 L20 AND EOM,S?/AU

=&gt; s 121 and lee,s?/au

57444 LEE,S?/AU

L22 2 L21 AND LEE,S?/AU

=&gt; s 121 and moon,j?/au

2467 MOON,J?/AU

L23 2 L21 AND MOON,J?/AU

=&gt; s 121 and park,k?/au

9934 PARK,K?/AU

L24 2 L21 AND PARK,K?/AU

=&gt; d 124 1-2 abs ibib

L24 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are a catalyst composition comprising a bidentate ligand, a monodentate ligand, and a transition metal catalyst and a process of hydroformylation of olefins, comprising reacting the olefin compound with gas mixture of hydrogen and carbon monoxide with stirring at an elevated pressure and temperature in the presence of the catalyst composition to produce aldehyde. The present catalytic comps. show high catalytic activity, high normal-to-iso aldehyde selectivity, and high stability.

ACCESSION NUMBER: 2005:1329727 HCAPLUS

DOCUMENT NUMBER: 144:71486

TITLE: Phosphorus-containing catalyst composition and hydroformylation process using the same

INVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun; Kwon, O-Hak; Eom, Sung-Shik; Lee, Sang-Gi; Moon, Ji-Joong; Park, Kwang-Ho

PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea

SOURCE: PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005120704	A1	20051222	WO 2004-KR1647	20040703
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK,			

LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,  
 NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,  
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
 SN, TD, TG

KR-2005118024 A 20051215 KR 2004-43335 20040612  
 CN 1867403 A 20061122 CN 2004-80029861 20040703  
 EP 1755781 A1 20070228 EP 2004-774073 20040703  
 R: DE, FR, GB, SE  
 JP 2007508131 T 20070405 JP 2006-532069 20040703  
 US 2007093680 A1 20070426 US 2006-576219 20060414  
 PRIORITY APPLN. INFO.: KR 2004-43335 A 20040612  
 WO 2004-KR1647 W 20040703

OTHER SOURCE(S): MARPAT 144:71486

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are a catalyst composition comprising a bidentate ligand, a  
 monodentate ligand, and a transition metal catalyst and a process of  
 hydroformylation of olefin compds., comprising reacting the olefin compound  
 with a gas mixture of hydrogen and carbon monoxide while being stirred at  
 elevated pressures and temps. in the presence of the catalyst composition to  
 produce an aldehyde. The present catalytic composition demonstrates the high  
 catalytic activity and option control of selectivity to normal aldehyde or  
 iso aldehyde (N/l selectivity) to a desired value.

ACCESSION NUMBER: 2005:1329709 HCAPLUS

DOCUMENT NUMBER: 144:71485

TITLE: Phosphorus-containing catalyst compositions and  
 hydroformylation process therewith

INVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun;  
 Kwon, O-Hak; Eom, Sung-Shik; Lee,  
 Sang-Gi; Moon, Ji-Joong; Park, Kwang-Ho

PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea

SOURCE: PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005120705	A1	20051222	WO 2004-KR1646	20040703
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,			

SN, TD, TG					
KR 2005118023	A	20051215	KR 2004-43334		20040612
CN 1863595	A	20061115	CN 2004-80029312		20040703
EP 1755782	A1	20070228	EP 2004-774072		20040703
R: DE, FR, GB, SE					
JP 2007507340	T	20070329	JP 2006-532068		20040703
US 2007123735	A1	20070531	US 2006-575147		20060407
PRIORITY APPLN. INFO.:			KR 2004-43334	A	20040612
			WO 2004-KR1646	W	20040703

OTHER SOURCE(S): MARPAT 144:71485  
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his

(FILE 'HOME' ENTERED AT 15:45:59 ON 02 AUG 2007)

FILE 'REGISTRY' ENTERED AT 15:46:41 ON 02 AUG 2007

L1 STRUCTURE UPLOADED  
L2 4 S L1  
L3 128 S L1 SSS FULL

FILE 'STNGUIDE' ENTERED AT 15:49:01 ON 02 AUG 2007

FILE 'REGISTRY' ENTERED AT 15:51:58 ON 02 AUG 2007

L4 STRUCTURE UPLOADED  
L5 50 S L4  
L6 32116 S L4 SSS FULL  
L7 0 S L6 AND L3  
L8 0 S L3 SUB=L6 SAMPLE  
L9 0 S L3 SUB=L6 FULL

FILE 'HCAPLUS' ENTERED AT 15:54:29 ON 02 AUG 2007

L10 73 S L3  
L11 12401 S L6  
L12 8 S L10 AND L11

FILE 'STNGUIDE' ENTERED AT 15:55:31 ON 02 AUG 2007

FILE 'HCAPLUS' ENTERED AT 16:01:41 ON 02 AUG 2007

L13 60 S L3 AND CATALYST  
L14 9 S L13 AND "TRANSITION METAL"  
L15 2579 S L6 AND CATALYST  
L16 184 S L15 AND "TRANSITION METAL"  
L17 145 S L16 AND LIGAND  
L18 1 S L17 AND L3  
E US2007-093680/APPS  
E US2007-093680/AP, PRN, PN  
L19 5 S JEON, Y?/AU AND KO, D?/AU  
L20 5 S L19 AND KWON, O?/AU  
L21 5 S L20 AND EOM, S?/AU  
L22 2 S L21 AND LEE, S?/AU  
L23 2 S L21 AND MOON, J?/AU  
L24 2 S L21 AND PARK, K?/AU

=> d 120 1-5 abs ibib

L20 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are hydroformylation catalysts and a preparation method thereof, and a hydroformylation method by using the same catalysts. The catalysts do not contain halogen, have enhanced activity and high selectivity of iso-aldehyde, are easily synthesized, and are suitable for hydroformylation. The imidazolylidene metal compds. represented by formula (1) are provided, wherein M is transition metal; R1 and R2 are each independently alkyl, cyclo alkyl, alkoxy, Ph or Ph with 1-5 substituents selected from nitro, fluoride, chloride, bromide, Me, Et, Pr and butyl; R3 and R4 are each independently hydrogen, halogen, alkyl, cyclo alkyl, alkoxy or phenyl; L1, L2 and L3 are each independently hydrogen, CO, acetylacetonato, trialkylphosphine or triphenylphosphine; and x, y and z are each independently an integer from 0 to 4, provided that a case that x, y and z is 0 is excluded. The hydroformylation catalysts comprise the imidazolylidene metal compds. of formula (1).

ACCESSION NUMBER: 2006:959591 HCAPLUS  
 DOCUMENT NUMBER: 145:347320  
 TITLE: Halogen-free hydroformylation catalysts with enhanced activity and high selectivity of iso-aldehyde  
 INVENTOR(S): Ko, Dong Hyun; Jeon, You Moon; Eom, Sung Shik; Kwon, O. Hak  
 PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea  
 SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given  
 CODEN: KRXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2005091199	A	20050915	KR 2004-16431	20040311
PRIORITY APPLN. INFO.:			KR 2004-16431	20040311

L20 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are imidazoline-2-ylidene-coordinated compds. and a hydroformylation method by using the same compds. The compds. have high catalytic activity on hydroformylation of olefin, especially exhibit high selectivity to iso-aldehyde when a ligand such as EP is applied. The imidazoline-2-ylidene-coordinated compds. represented by formula (1) are provided, where M is a transition metal; and cobalt (Co), rhodium (Rh) or iridium (Ir); R1 and R2 are each independently C1-20 alkyl, C4-8 cycloalkyl, C1-20 alkoxy or Ph with 0-5 substituents selected from nitro (-NO2), fluorine (-F), chlorine (-Cl), bromine (-Br), Me, Et, Pr and butyl; L1 and L2 are each independently carbonyl, acetylacetonato or triphenylphosphine; and n and m are each independently an integer from 0 to 4 and n+m is an integer from 2 to 4. The hydroformylation method represented by a reaction formula (2) comprises reacting olefin compound in the presence of metal catalyst and organic trivalent phosphorous compound with a mixed gas of carbon monoxide and hydrogen, wherein the metal catalyst is a compound of formula (1).

ACCESSION NUMBER: 2006:939101 HCAPLUS  
 DOCUMENT NUMBER: 145:347317  
 TITLE: Imidazoline-2-ylidene coordinated compounds having high catalytic activity on hydroformylation of olefin and hydroformylation method by using same

INVENTOR(S): Jeon, You Moon; Ko, Dong Hyun;  
 Kwon, O. Hak; Eom, Sung Sik  
 PATENT ASSIGNEE(S): Lg Chem. Ltd., S. Korea  
 SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given  
 CODEN: KRXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2005077407	A	20050802	KR 2004-5235	20040128
PRIORITY APPLN. INFO.:			KR 2004-5235	20040128

L20 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are a catalyst composition including a transition metal catalyst and a nitrogen-containing bidentate phosphorus compound and a process for hydroformylation reaction of olefins to prepare aldehydes which includes stirring the catalyst composition, an olefin compound, and a gas mixture of carbon monoxide and hydrogen, under high temperature and pressure condition. Therefore, very high catalytic activity and high selectivity in n-aldehyde or iso-aldehyde according to the type of a substituent are ensured.

ACCESSION NUMBER: 2006:231908 HCAPLUS

DOCUMENT NUMBER: 144:313994

TITLE: Phosphorus-containing catalyst composition and process for hydroformylation reaction using the same

INVENTOR(S): Jeon, You Moon; Ko, Donghyun; Eom, Sungshik; Kwon, O. Hak; Choi, Jaehui

PATENT ASSIGNEE(S): S. Korea

SOURCE: U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006058558	A1	20060316	US 2005-227479	20050915
KR 2006025026	A	20060320	KR 2004-73919	20040915
WO 2006031068	A1	20060323	WO 2005-KR3055	20050915
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CN 1909964	A	20070207	CN 2005-80002703	20050915
EP 1789185	A1	20070530	EP 2005-808509	20050915
R: DE, FR, GB, SE				

PRIORITY APPLN. INFO.:

KR 2004-73919

A 20040915

WO 2005-KR3055

W 20050915

OTHER SOURCE(S):

MARPAT 144:313994

L20 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are a catalyst composition comprising a bidentate ligand, a monodentate ligand, and a transition metal catalyst and a process of hydroformylation of olefins, comprising reacting the olefin compound with gas mixture of hydrogen and carbon monoxide with stirring at an elevated pressure and temperature in the presence of the catalyst composition to produce aldehyde. The present catalytic compns. show high catalytic activity, high normal-to-iso aldehyde selectivity, and high stability.

ACCESSION NUMBER: 2005:1329727 HCAPLUS

DOCUMENT NUMBER: 144:71486

TITLE: Phosphorus-containing catalyst composition and hydroformylation process using the same

INVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun;  
Kwon, O-Hak; Eom, Sung-Shik; Lee, Sang-Gi;  
Moon, Ji-Joong; Park, Kwang-Ho

PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea

SOURCE: PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005120704	A1	20051222	WO 2004-KR1647	20040703
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2005118024	A	20051215	KR 2004-43335	20040612
CN 1867403	A	20061122	CN 2004-80029861	20040703
EP 1755781	A1	20070228	EP 2004-774073	20040703
R: DE, FR, GB, SE				
JP 2007508131	T	20070405	JP 2006-532069	20040703
US 2007093680	A1	20070426	US 2006-576219	20060414
PRIORITY APPLN. INFO.:			KR 2004-43335	A 20040612
			WO 2004-KR1647	W 20040703

OTHER SOURCE(S):

MARPAT 144:71486

REFERENCE COUNT:

4

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AB Provided are a catalyst composition comprising a bidentate ligand, a monodentate ligand, and a transition metal catalyst and a process of hydroformylation of olefin compds., comprising reacting the olefin compound

with a gas mixture of hydrogen and carbon monoxide while being stirred at elevated pressures and temps. in the presence of the catalyst composition to produce an aldehyde. The present catalytic composition demonstrates the high catalytic activity and option control of selectivity to normal aldehyde or iso aldehyde (N/l selectivity) to a desired value.

ACCESSION NUMBER: 2005:1329709 HCAPLUS  
 DOCUMENT NUMBER: 144:71485  
 TITLE: Phosphorus-containing catalyst compositions and hydroformylation process therewith  
 INVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun; Kwon, O-Hak; Eom, Sung-Shik; Lee, Sang-Gi; Moon, Ji-Joong; Park, Kwang-Ho  
 PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea  
 SOURCE: PCT Int. Appl., 19 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005120705	A1	20051222	WO 2004-KR1646	20040703
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2005118023	A	20051215	KR 2004-43334	20040612
CN 1863595	A	20061115	CN 2004-80029312	20040703
EP 1755782	A1	20070228	EP 2004-774072	20040703
R: DE, FR, GB, SE				
JP 2007507340	T	20070329	JP 2006-532068	20040703
US 2007123735	A1	20070531	US 2006-575147	20060407
PRIORITY APPLN. INFO.:			KR 2004-43334	A 20040612
			WO: 2004-KR1646	W 20040703
OTHER SOURCE(S):		MARPAT 144:71485		
REFERENCE COUNT:		4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

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COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
79.31	745.41

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-13.26	-19.50

FILE 'STNGUIDE' ENTERED AT 16:08:46 ON 02 AUG 2007

10/576219 PHOSPHORUS-Cntg CAT COMPO

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FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Jul 30, 2007 (20070730/UP).